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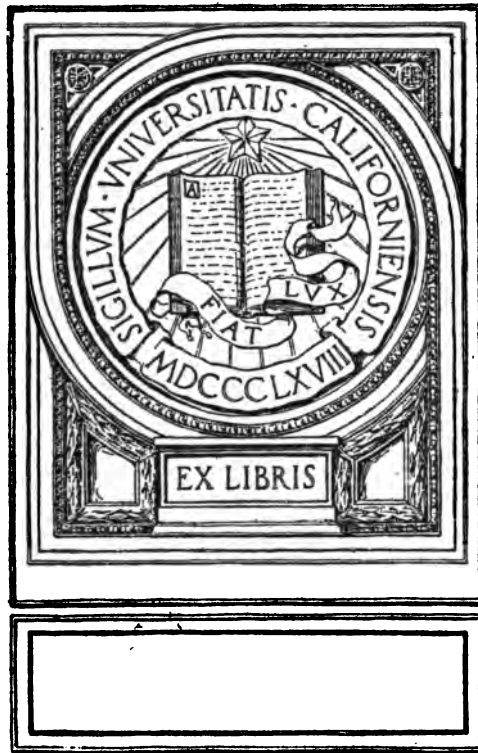
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NOTES ON THE
EVOLUTION OF INFANTRY TACTICS

NOTES ON THE EVOLUTION OF INFANTRY TACTICS.

BY

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PREFACE.

THE chapters which go to the making of the present book were written in 1901 and 1902, under conditions which I have already sufficiently described in the prefaces to my "Cavalry, its Past and Future," and "The Evolution of Modern Strategy," and to which therefore I need not again allude. In the meanwhile, however, we have had fresh experience of what a great war between disciplined armies with modern weapons really means, which has served to demonstrate the strength of the positions I have taken up in the most striking manner.

Yet the conditions of this particular struggle have been by no means those I had in my mind at the time of writing, and the defensive form might have shown itself locally far more successful than it has done, without in the least invalidating my conclusions. I had before me the conditions at present prevailing in Western Europe, in regard to communications, facilities of transport, and the like, and my imaginary armies were actuated by the driving power of modern twentieth-century Continental civilisation, which compels both combatants to seek an early decision at any cost. From these conditions in the aggregate, there must result campaigns of the Napoleonic type, in which rapid manœuvring decides the manner in which actual collision takes place, and the construction of defensive works after the fashion of the early half of the eighteenth century, of the American Civil War, and the Russo-Turkish War is entirely precluded by want of time.

In Manchuria all was different; the country was as roadless as Central Europe in the seventeenth century, and far more so than America in the 'sixties. Transport on both sides in efficiency was far below what either side had been led to anticipate, and on neither was there the same all-compelling need to seek a decision at any cost. The Russians naturally seeking to evade one in order to gain time, the Japanese, thanks to the lower standard of well-being

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amongst their people, not being driven on, as, for instance, we might be, by a starving population behind them.

To test the highly-finished and well-balanced tactical engine, the result of General Meckel's talent and energy, under these conditions was like trying a modern express locomotive for speed over a contractor's line, and I would most earnestly warn all students of this campaign to bear this point well in mind before they proceed to generalize on the insufficient data now before us. In time the embargo on our confidential information will be removed and then it will be seen how little real subjective fact we have available at present to build upon.

One point, however, is already matter of common knowledge, viz. the part played in the war by the geological peculiarities of the district fought over. In contradistinction to the theatre of operations in South Africa, the characteristic slopes of the hill-sides are everywhere "convex," not "concave," hence from the first the Russians felt the "Defenders' dilemma" in its most acute form. If they went far down the slope to get a field of fire, their supports could not be brought forward in the teeth of the Japanese shrapnel; if they elected to fight on the tops of the hills they could find no field of fire. If, to get a better field of fire, they built higher entrenchments, then they offered a better target for the artillery, and, in fine, wherever they went, they were always on the sky-line as regards the attacking infantry.

I lay particular stress on this point, because it serves better than any other to bring out the reasons for the extraordinary difference that invariably prevails between the opinions of trained soldiers and of press correspondents in their relative appreciation of the strength of positions, and of the prospects of, or execution of any particular attack. Thus certain correspondents, writing the day before the engagement at Kuliencheng, freely prophesied for the Japanese a second Colenso; others committed themselves to the opinion that the Russians had learnt nothing from all our experience in South Africa, because their entrenchments were against the sky-line or too high in their command, and so forth; and during the last five years I have not read a single description of our home or Continental manœuvres in which this same mistake of judging attacks from the rear and not from the front has not made its appearance.

Now I would ask correspondents to look at this matter as

reasonable men. We all start from much the same educational basis, and is it not therefore probable that the soldier who has to act with the responsibility of many lives pressing hard upon him, and has the experience of years to guide him, may not have both good and sufficient reason for the apparently insane conduct they so often attribute to him? If the "anti-patriotic bias" is so strong within them that they can see no redeeming features in our own men, can they really suppose that such men as Brugère, Bonnal, Langlois, etc., the pick of the French Army, all trained in the best of all schools—"the school of defeat"—are in the habit of acting before the most critical eyes of military Europe with the lightheartedness of escaped lunatics? Or if they object to the excellence of the "school of defeat," what about the pupils of victory? Do they really imagine that German manœuvres are conducted without method or arrangement?

The truth is that this question of the convexity or concavity of the slopes to be fought over goes right back to the very heart, not only of tactics but of strategy; for as between equal numbers, all strategy is ultimately based on the question of the amount of time that a given body of men can hold out in a certain position. This it is which determines the magnitude of the "mass" that can be set aside for decisive purposes. On a concave or nearly level plain—Paardeberg for instance—a couple of thousand men may hold the better part of an Army Corps at bay all day. On a convex one, —*e.g.* Kuliencheng, as an extreme case—ten thousand assailants may determine the fall of a line ten miles long and held by fifty thousand, the rush of the assailants from cover taking minutes only, whereas the arrival of reinforcements for the defender may need hours.

We are justly proud of our war correspondents as a body, their individual courage, endurance, and conscientiousness as regards the publication of confidential matter; and their objective veracity I have again and again heard praised not only by English, but by German Staff Officers of high rank. What they need is the subjective faculty, *i.e.* the power of appreciating the relative truth of facts in their relation to one another; and to men of their intellectual capacity the acquisition of this power presents no difficulties. They are mostly fair linguists, and foreign, particularly French military literature, is accessible enough.

I make this plea in all earnestness, for during the years of

preparation now before us, the nation has need of the correspondent no less than of the Army, and one of the greatest of our dangers would be eliminated if both could only pull together. The Press complains of the dearth of officers, particularly in the Cavalry, but what else can it expect when it holds up to public derision almost every man who tries to do his duty, and almost in exact proportion to the degree of ability he displays in its performance?

Not alone does this treatment disgust the officer, but it tends to destroy the confidence of the men in their leaders, and thus render the conduct of future operations an almost hopeless impossibility. The whole essence of an army's strength, in the days when warfare was chronic, not incidental, lay in the confidence the men had in their leader. They knew that he would not order what was impossible of execution, and hence obeyed his orders without question because they knew that he, and he alone, was in a position to know whether circumstances demanded the effort he called on them to make. This, too, has been the strength of the Japanese in the recent struggle. Would men taught week in week out by the public press to believe that their officers were all incompetent fools, have followed them through the water at Nanushan? I know of no instance in all military history to equal this achievement, for it tried the men to the utmost from every point of view, but the result proved that the Japanese generals knew their work. The water turned out to be fordable, and the artillery preparation had blunted the enemy's aim. Imagine what the daily papers would have said in England had such an attack been ordered even in peace time.

Let me give an incident in support from recent personal experience. Some years ago I was present at an inspection of a Volunteer Engineer Battalion, which had just completed a long line of cask rafts which lay along the foreshore of a pretty rapid tideway. The Inspecting Officer was a thoroughly competent R.E., who had been for years in the Pontoon train, and also knew the tides in this particular estuary as a most accomplished yachtsman. The rafts being completed, he ordered the men to man them and shove off, an order which produced visible signs of consternation. However, it was obeyed, and the voyage began, the raftsmen being carefully instructed to keep within the tideline, beyond which a strong current was setting out to sea, the intention being to take the rafts a mile or two to a neighbouring

creek and there form a bridge. But at the critical moment the wash of a steamer struck the leading raft; there was not even the suspicion of danger, but the oscillation proved too much for the men. In a moment the leading raft swerved over the tide-line, and the whole procession, being lashed together, turned solemnly round and began to drift to sea. Only the old Drum Major, an ex-soldier, with the drums towing in a pinnace behind, rose to the occasion, and as the cackle of voices on the rafts swelled like the chorus of rooks at eventide, he made his boys strike up "A Life on the Ocean Wave," and redeemed the situation. The Inspecting Officer had anticipated something like this from the first, and, to be ready for all eventualities, had instructed a W. D. tug to wait round a neighbouring point to tow the rafts back if required, and his signal being promptly responded to, the men were soon back at their starting place, but they did not stop talking for several hours, and for days after the post brought to the Inspector cuttings from the press, commenting on his wanton disregard of the men's lives, all forwarded anonymously. The application is obvious. They all thought they knew better than their Inspecting Officer what was safe and what was not. Would those men have obeyed unhesitatingly an order to march right through an apparent arm of the sea, to the attack of a well-entrenched position?

In a great war (a real struggle for existence) these things would no doubt soon adjust themselves. Once the nation realised the personal interest of each individual in the rapid termination of their sufferings, the Press would howl for slaughter, as in the case of South Africa it clamoured for results without paying the price in blood. The consequence of this, after much needless suffering, would be the rise of leaders of the Ulysses Grant type—men who without strategic preparation would hurl men against defences even as he did, in the battles of the Wilderness, Spottsylvania, Cold Harbour, and Petersburg, in May and June, 1864, and with the same degree of justification, viz. the cry of the people for Peace, to excuse him. But we want neither extreme, and there is no reason in the nature of things why we should be afflicted with either, if the Press would only collaborate with those who have made these matters their life study, and can warn journalists against the pitfalls which beset the over-zealous tactical reformer.

It cannot too often be repeated that all these theories of

"making omelettes without breaking eggs," *i.e.* of winning battles without bloodshed, are as old as War itself. They recrudescence again and again after every campaign, and the current of true military effort and study is clogged by their accumulation at every turn. They all arise from the same fundamental misconception of what War really means, and how alone great results in it are to be obtained. In old days, in the conflicts of uncivilised barbarians, individual prowess (whatever the weapon employed might be) counted for very much indeed, almost for everything. But the essence of the whole evolution of civilisation, and the secret of its gradual triumph over savagedom, has lain and always will lie in the more or less highly developed spirit of self-sacrifice in the civilised race, which has made *some* men always ready to die that the others may be saved.

Without this spirit, which it is the business, first of the nation itself, next of its officers, to create and foster, neither Strategy nor Tactics is conceivable, for, under conditions of equal numbers, you can only be strong at the decisive point at the cost of being weak at others. The chances of victory, therefore, turn entirely on the spirit of self-sacrifice of those who must be offered up to gain opportunity for the remainder. In other words, the true strength of an Army lies essentially in the power of each, or any, of its constituent fractions to stand up to punishment, even to the verge of annihilation when necessary, for no one can tell beforehand on which fraction the bulk of the strain may fall. The test may come either on attacking or defending bodies, for attack is more often than not the best method of disconcerting an enemy's plans; but with troops trained to judge their leaders merely by the skill they show in economising their men's lives, what hope of adequate endurance can ever exist?

This is what Clausewitz meant when he wrote, "Men should be trained to know how to die, not how to avoid dying." He was thinking of moral factors, not technical ones only; but who is there nowadays to take the moral side of a soldier's training seriously?

This year is the Centenary of Trafalgar, and Nelson's immortal signal has been waved in our faces from almost every pulpit, and by every newspaper; but what signs are there of any serious moral regeneration of the nation, anything adequate to guarantee that our men, when the time comes, will march to almost certain death

with the magnificent intrepidity of the sons of Japan? Yet the spirit of the Japanese religion is "honour," not "self-sacrifice."

Duty and self-sacrifice are, in fine, synonymous terms, and "self-sacrifice" is the very essence of the Christian faith we profess; but where and how do we teach it? The very conception has been abolished from our board-schools, thanks to the dissensions of our spiritual pastors, and, so far, no one has even suggested a way out of our difficulties.

But after nearly ten years' experience in command of a Volunteer Battalion, I begin to think that such a way may yet be found, for in the Volunteers all classes can find a common meeting ground. Soldiers, clergy, educationalists, and sectarians of every description, we can all combine on the single word "Duty," interpreting it, no doubt, each in our own way, but retaining its essential spirit throughout.

All that is necessary is that we should realise that War, like disease, is the punishment nations bring upon themselves by disobedience to the fundamental laws of nature, and that it can only be averted by the comprehension of these laws—again precisely as in the case of epidemics—by education and individual self-restraint. We are learning to avert disease, why not apply the same methods to guard against any breach of the peace?

I am confident that only our ignorance of what War must entail on our people stands in our way. If once the nation could be roused to the manner in which it must react upon our women and children, the famine and pestilence which must inevitably follow in its train, and the intensification of national suffering which "surrender" must entail, there would be no lack of willing workers in the field, but the difficulty is to secure the awakening.

The "food-supply" question is the lever to be employed. If one-half the nation is convinced that even a two-shilling duty on corn will suffice to render the sufferings of the poor unendurable, it ought not to be difficult to make them realise that with corn at 100s. a quarter things would be very much worse.

Yet from that calamity only obvious readiness of both Navy and Army can save us. As our enemies well understand, "ironclads cannot climb hills," and our study of the ten years from Trafalgar to Waterloo should suffice to convince us what unreadiness for land warfare may entail.

We shall not be "obviously ready" until the intelligence of the

nation is thoroughly and visibly roused. This is the work of the educator, and until the determination of the manhood of the race to endure all things sooner than surrender is completely apparent, we are in a bad way. Now this is the work of both the soldier and the clergy—the former to train the body, the latter to reach the determining factor, the soul. We have covered the whole country with a network of Volunteer centres, whence radiate out the lines which bind the nation to its Army and Navy in sympathy. Now let us go a step further, and let the soldiers show to both the nation and its spiritual and intellectual guides what strongholds of both faith and education these centres may become. If the educators fail us, then let us go to the clergy ; surely they can never hesitate to preach from the text—

“Greater love hath no man than this, that a man lay down his life for his friends.”—St. John xv. 13.

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NOTES ON THE EVOLUTION OF INFANTRY TACTICS.

CHAPTER I.

"Discipline" means "collective will-power"—Its importance better understood formerly when war was chronic—Battles won by collective action of masses, not by the skill of individuals—Impossibility of conducting a "battle" in individual order—Causes of existing confusion of thought—Fire has always, since the days of Gustavus Adolphus, been the prime factor of success—How generals have striven to obtain it—Defects of various methods—Origin of the slow march—General method of attack previous to the French Revolution—Its difficulties—The disappearance of skirmishers and its cause—Their reappearance in Prussia under the name of "Freischaaren"—Attempts to regulate their action—Differences of opinion between the "Line" and "Skirmisher" schools—Entrenchments in the first half of the eighteenth century—Causes which led to their adoption—The lines of Weissenburg—Müller's 'Elements of Field Fortification'—Fire and obstacles to be faced in the old days—Yet the assault frequently succeeded—Conclusions—Our forefathers were no "butchers"—Recruiting difficulties restrained them—Skirmishing in North America—Advantages of the Colonists—The first "khaki" battalion—German Staff officer on British red uniforms—Tactical and strategical considerations influencing the choice of colour for uniforms—Officers as rallying points—General Jacob and the Scinde Horse—Colonial ideas filter into receptive French minds—Social causes at work in French army—Paper warfare between the partisans of "*l'ordre mince* and *l'ordre profonde*"—The camp at Vassieux—Outbreak of the wars of the French Revolution.

EVER since firearms became the decisive factor on the field of battle, the essential problem to be solved in the training of troops for war has been to impart to them that collective will-power, known by the name of "*discipline*," which enables men to overcome their natural fear of death and mutilation, and guarantees that they will continue to advance against a storm of bullets preserving almost to the last some remnant of the power of combined action against the enemy in front of them.

In the days when warfare was almost chronic, it was discovered by experiment that the ceaseless repetition of certain more or less mechanical movements by bodies of men in close order was the shortest road to the attainment of this quality. No one attempted to explain the matter scientifically, for the facts were patent to

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all experienced soldiers, and no one troubled to question them. Nowadays, when great wars between European nations have become so rare that the number of officers who have seen a "battle" * fought out to its ultimate conclusion is so small that they may almost be counted on the fingers of one's hands, public opinion has fallen so completely out of touch with the actual nature of a life-and-death struggle that it appears to be imagined that the highest aim of a soldier's training lies in teaching him in peace time to "know how to avoid dying, not how to die," to invert the words of Scharnhorst in 1809.

The one thing that differentiates an Army from a mob has hitherto been understood to be the power of collective action possessed by the former; but the result of these modern theories of training men as individual fighters must be, if they are pushed to their logical conclusion, to substitute a mob of individuals incapable of collective action for the Army of the present day.

The reformed Army of the future will march to the battle-field in brigades, divisions, and so forth, and observe faithfully and obediently certain rules of good behaviour laid down for observance in camp and quarters; but, as soon as the bullets begin to fly, it will resolve itself into successive lines of individuals, each of whom will make himself comfortable under cover, and engage in a duel with an unseen enemy on his own account.

Imagine Continental Armies of half a million men engaging under these conditions. At the rate of 1000 men to the mile, more than double the density of the average Boer fighting-line, their fighting-line would extend 500 miles, and even if we halve that it would still be 250 miles; but what power on earth is to supervise and control such a line, or impart to it the necessary impetus for the final advance without which the enemy cannot be compelled to quit his position, *i.e.* to acknowledge himself defeated? Our experience at the Modder River and Paardeberg suffices to complete the picture.

One of the chief causes for the confusion of thought that so long existed as to the relative merits of shock and fire tactics, and of which lingering traces are not infrequent even nowadays, originated in the gap which separated the generals from the regimental officers and the rank and file, possibly also in the want of that habit of clear thought and expression that has been

* Technically the term "battle" is only applied to the decisive collision of armies which forms the culminating point of a series of strategical marches and combats. Thus Gravelotte and Sedan were "battles"; Woerth, Spicheren, Borny, Vionville, only combats or actions. German "Gefechta." There was no "battle" in the Boer War. Liaoyang and Mukden were battles, but not Kuliencheng or Nanushan.

characteristic of average men of action, even of genius, though not of talent, in all periods.

When Napoleon wrote, "*Le feu est tout, le reste peu de chose*," he formulated no new discovery, for since the early days when the pike gave way to the firelock, in practice every commander showed himself thoroughly aware of the fact, and formed his lines in such a manner as to render a direct frontal assault a physical impossibility as long as his men remained unshaken.

When the normal rate of fire was only one round in every two minutes, men stood in files sixteen to twelve deep, one pace apart; the leader of the file took two paces to the front, made ready, fired, then countermarched and took his place at the end of the file to load again, whilst the next man came up in his place and went through the same performance, so that a steady rate of twelve rounds for the first minute could be relied on to stop a charge as long as the discipline and order of the troops remained unshaken.

But the extent of front which could be held by a given number of men in these dense formations was obviously very limited, and the flanks then, as always, were the most vulnerable points. Hence every effort was directed to the increase of the rate of fire, so that a sufficient volume of projectiles could be delivered by fewer men to the yard, for in this way only with equal numbers could the enemy's front be overlapped and his flanks turned. Step by step this led to the evolution of the line with four, three, and ultimately only two ranks, and the consequent enormous extension of front which thus became practicable. There remained, however, always this difficulty for the attack, from which the defensive is free, viz. that the range of the arms in use being equal, then in order to shake the defenders' fire-power, and thus render a bayonet-charge possible, the assailant had to halt in the full sweep of his enemy's bullets, and once halted it was not easy to bring the mass into motion again.

This was the origin of the slow march to the assault for which we now so freely ridicule our ancestors, without considering that they, at least, as a rule, spent as many months of the year in the field as we now spend days in the manœuvres. Possibly their schooling may have often been neglected, many of us doubtless would have been richer men to-day if it had not been, but they were not altogether fools; and when one finds an apparent absurdity persisted in generation after generation by men of such conspicuous ability as Marlborough, Prince Eugene, and Frederic the Great, the presumption is strong that there was no other practical way out of the difficulty.

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The general method of attack was as follows: The line advanced with the utmost possible steadiness until it became evident that it could go no further except under cover of its own fire. Then the order was given to open fire by half-companies or companies; and the named companies took three long paces to the front, made ready, and fired, while the remainder maintained the same steady pace as before. Then, as they overtook the firing sections, they in turn stepped out three paces and delivered their volley, and so on. So that a steady stream of bullets was directed against the enemy, whose return fire fell off proportionately in accuracy.

By degrees, of course, all order was lost, a stationary fire-fight ensued, and the attacking sides ultimately either bolted or, receiving a fresh impetus from behind by the advance of the second line, rushed forward to the charge with no more attention to dressing, pace, or order than we should show nowadays.

There was always, however, this difficulty in practice, viz. the judging of the distance at which to open fire; to delay too long, then as now, meant the dissolution of all order by casualties—chiefly, of course, amongst the officers, who were more easily distinguished by their dress and appointments when men fought at 150 yards instead of at 1500—and to commence too soon meant ineffective fire at too long a range, with a possibility of indefinite protraction of the fire-fight, and consequently heavier losses than were actually necessary.

In the old days of file-firing masses it was comparatively easy to shake the order of the defender by a few well-aimed shots either from guns or skirmishers preceding the attacking force, and both were of course largely used; but whilst the power and mobility of artillery remained almost stationary for nearly a century, the depth of their target decreased enormously, and as the foot-soldier's weapon became more portable, the gunners had more to fear from the skirmisher, who very early in the eighteenth century began to carry rifled arms of considerable range and accuracy.*

On the other hand, the skirmishers themselves had more to fear from the fire of the closed line, and it took far more hits to unsteady the better-disciplined men of the latter than the less perfectly trained ones of the earlier formations.

* It is not suggested that rifled arms of uniform pattern were issued by any particular State, but that all kinds of rifles, such as are to be found in all collections of arms, the private property of individuals, found their way by one means or another to the front, and extra rewards were promised and paid to men who could make good shooting with them. Game-keepers and poachers were everywhere in request where fighting was going on.

Skirmishers, therefore, had everywhere lost in importance relatively even in war-trained Armies on the Continent, and in peace-trained ones, such as the Prussian under the Great Elector, had almost disappeared.

This tendency to disappearance of the skirmisher in peacetime is, and always has been, almost universal, and deserves more than passing reference.

Teaching skirmishing in peace naturally spoils the men's clothes, and since in every European Army the regimental officers had a strong pecuniary interest in the cost of the clothing (even nowadays they still feel acutely on the subject of the men's appearance, where, as in our service, the uniform is fitted to the man, not the man to the uniform), there was a strong and very natural repugnance against encouraging the men to lie down in puddles or to scramble through bramble thickets. Moreover, the teaching of grown-up men to play hide-and-seek seems in itself to be antagonistic to the average soldier's conception of his duty, for there is always the idea at the back of one's mind that the instinct of self-preservation is quite sufficiently developed in the ordinary human being for all practical purposes, and that it is always a great deal easier to get men to take cover than to leave it, and in those days there was, especially in Prussia, the difficult question of desertion to be reckoned with.

The brilliant successes won by the steadiness and rapidity of fire of the Prussian Infantry, when at length, after a long interval of peace, they had again taken the field, soon made them the model for all Europe. Their regulations and drill-books were earnestly studied, and since these contained no word about skirmishers, whereas those of the Austrians did, and it was known that the latter largely employed them, the conclusion was hastily jumped at that the secret of the Prussian successes lay in the absence of skirmishers, just as thirty years ago we all fancied we had found the fetic of victory in their presence.

This conclusion was, however, in both cases equally untenable, for at the very time all other Powers were diligently copying Prussian patterns, the latter were beginning to find out that neither form in itself is a sufficient guarantee for victory in the field. In 1742 and subsequently the despised Austrian light troops and skirmishers inflicted so much petty annoyance and punishment on their adversaries that the latter were compelled to raise new formations to combat them.

These new "Freischaaren," as they were termed, were irregular in every sense of the word. Enlisted only for the duration of the war, from all the dare-devils of Europe, under exceedingly lax

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conditions of discipline and very liberal considerations as regards loot, though they undeniably often did most useful work, and saved the regular battalions many a weary night's watchfulness, they were a nuisance to the higher commands through the bad example they set in quarters, and socially an abomination to all ranks, for no property was safe from their fingers, and they were by no means above plundering the wounded of their own side.

In the interval between the second Silesian war and the commencement of the Seven Years' War—*i.e.* from about 1744 to 1756—various projects were put forward to render the regular Infantry more independent, and the Grenadier companies actually did receive training on more independent lines. The whole Army, indeed, became more individual and less wooden, and seems in practice to have met the conditions of determined individual fighting in quite the modern spirit. As the latest volume of the new 'Prussian Official History of the Seven Years' War,' in the description of the battle of Lobositz and of the long and obstinate Infantry fighting which took place in the vineyards and on the terraced hills north-west of that village, points out, the individual courage of the soldiers was excellent, and the well-disciplined men readily adapted themselves to the growing confusion of the fight, quite in the spirit of the most modern regulations, just as our own Line Infantry have invariably fought themselves out of tight corners in all quarters of the world—often, perhaps, with heavier loss than appeared to some of the actors afterwards as strictly necessary, but still victoriously, which is the main point.

The real truth lay, and has always lain, as we shall see distinctly hereafter, midway between the two schools, inclining rather towards the close-order side.

The "Skirmisher" school then, as now, read a meaning into the words of the close-order regulations, which these were never intended to convey, and, unconsciously, all our discussions on this point are still biased by the views of these early days.

Though generals strove by every means in their power to bring up accurately dressed battalions against the marked enemy on the parade-ground, it is not for one moment to be supposed that these men who had grown grey in the service of their country on the battle-field were not perfectly conscious that ultimately all these brilliant productions dissolved into chaos when the bullets began to fly; and even if, now and again, when opposed to troops of inferior qualities, attacks did get home with the bayonet without a shot being fired or order lost, in the open field, yet that against entrenchments—and it was more often than not in those days that

it was a case of assaulting entrenchments—no hope of leading closed orderly bodies inside the works could possibly exist.

Our modern omniscient war correspondents appear to imagine that the Boers have been the first to discover the value of earth-works, though in fairness I must admit that some have also heard of Tottleben at Sebastopol and Plevna; but nothing could be further from the truth than this idea that entrenching is a novelty. On the contrary, it was precisely in those early days, after and during the Thirty Years' War, when the entrenchment mania attained its zenith, and with very good reason, for roads were scarce in those days, and the country so impoverished by incessant plundering, that all provisions had to be carried on waggons; the pace was slow, the route certain, and hence time and a reasonable certainty always existed that a selected position could not be outmanœuvred—very much, indeed, the same conditions that enabled the Boers to occasion us so much annoyance as long as we too were tied to the railways and the lowest speed of a slow trek-ox.*

It is true that the "hasty-shelter-trench" type was not in vogue in those days, for the simple reason that cover to load standing was all-essential, and such cover took time to construct; but time there usually was in abundance, and works grew up of a magnitude which we have a difficulty even in grasping. The lines of Weissenburg, for instance, may be regarded as typical; they stretched from the Rhine some twenty to twenty-five miles in length, right up into the mountains, having everywhere a ditch fifteen feet deep, and a parapet giving from ten to twelve feet cover to the ground within. The actual trace varied, according to the views of the man who was last at work upon them, and whether he considered his predecessor's work good enough to stand. Who first selected the general alignment I do not know; it was long before the days of the bastion-trace, however, and therefore probably laid down in a simple indented trace; but this must subsequently have been altered, as those portions which I have myself seen (the works are still to be recognised on the ground) are now bastioned, and everywhere where necessary, and often where not, are reinforced by redans and lunettes. It is true they had no barbed-wire entanglements in those days, but timber was plentiful and labour cheap, and a sixty-foot abatis, backed by palisades and fraises, as shown in the old text-books, was an excellent substitute for the more modern development.

These works I only cite as typical, for, as I have said, they are

* Written before the Russo-Japanese campaign, in which again like causes have produced like effects.

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still in existence, and any one who wishes to form an idea of the passive defence which had in those days to be surmounted, has only to take Müller's 'Elements of Field Fortification,'* the original text-book on the subject at the Royal Military Academy, and visit the spot; but all the Low Countries bristled with similar works, which, nevertheless, and in spite of all accessories, were again and again stormed or surprised by Marlborough's men, who were by no means all from these Islands, as we sometimes imagine.

Let us try to picture what the direct assault of such works amounted to. In addition to the passive obstacles, such as military pits, palisades, etc., they were usually formed with banquettes for a double rank of Infantry, who had loading-parties in rear to pass up fresh muskets as required, and they were generally liberally supplied with siege guns, 12-, 18-, and 24-pounders, and short howitzers or carronades for flanking purposes. So that every foot of ground to the front was under a cross-fire, often from several works at once. The case-fire from the guns was, of course, equal to the case-fire of modern weapons of equal calibre, and, roughly, each round weighed double the spherical shot which gave its name to the gun. Thus, an 18-pounder fired 36 lbs. of case, which, at 1 oz. to the single shot, the usual weight, as far as I have been able to ascertain, would give 576 projectiles. They could be fired twice within the minute, and were usually spaced 15 to 18 feet from centre to centre. In the same space we could now place 12 men with magazine rifles who could fire 20 rounds (unaimed) in the minute, or 240 bullets in all. Which would be the pleasanter to face? I will leave my readers to work out for themselves the total chances of being hit in the final rush through the cross-fire of such works, only indicating that they were many times greater than any we have had to face in recent years, and would remind them that, nevertheless, such works have been repeatedly stormed in the past, and that until the most recent present, it was an axiom of warfare founded on experience that determined men properly handled† could not be kept out of any work unless it was surrounded by some physical obstacle which could not be removed, except at the cost of time and labour, such as a 30-foot scarp, which would break a man's neck if he fell down it.

Of course, the existence of works of such strength formed in itself a temptation to the defending general to withdraw men from their garrison for employment elsewhere, and half the game of war in those days consisted in inducing the defender by threats at one point to weaken his force at another, and often these ruses

* Date about 1756.

† The Japanese at Nanushan have again demonstrated the truth of this axiom.

succeeded, but not always; and then nothing was left, if the campaign was to be completed, but to storm the works outright, and, if the men did what was expected of them, the leaders rarely failed in their duty either.

That confusion must be an inevitable consequence of such assaults must have been as clear to our forefathers as it is to us. Hence, since they were undoubtedly men of far wider experience than we can boast, and intellectually by no means inferior—for who have we to match with Marlborough or Frederic the Great nowadays?—the conclusion seems to me to follow that they only adhered to the rigid parade-ground school of training, because their experience proved to them that there was no other system practically adaptable to the human nature of the time, which rendered it possible to evolve in the individual a power of self-sacrifice, and in the mass an "*esprit de corps*," or collective will-power, which would face the certain slaughter such fighting was sure to entail.

An idea appears to prevail that these old generals were terrible butchers, delighting in human gore. I am aware of no evidence to support the suggestion. On the contrary, there is the testimony of their private letters, and the well-known devotion many of them—Marlborough especially—inspired in their soldiers, to prove that they loathed unnecessary bloodshed far more than the average British civilian for whom the daily press caters, who likes his horrors so hot and strong that, when no hand-to-hand fighting has taken place, it has to be invented and written up in Fleet Street. But, even if they had been veritable vampires in human shape, it is overlooked that the conditions of warfare in those days would have rendered it impossible for them to indulge in their favourite diet.

I do not allude to the weapons, but to the conditions of recruiting, which, though it is often forgotten, is really the limiting factor in this connection. Fighting could only be done by trained men in those days; it took time to teach a man to load and fire three, and even seven, rounds a minute (the former the general average, the latter the highest Prussian standard), even if we neglect that insensible psychical alteration which the habit of drill induces—and undrilled he was a nuisance to every one.

At the lowest, by the time the recruit was fit for the ranks, he had cost, to raise, equip, feed, and train, the better part of £100—and national debts had hardly been invented.

The King's soldiers were, in fact, in all Europe, except in England, the King's personal dependents, as much his property as his grooms and coachmen, and their number was strictly limited. Hence, independently of all feelings of humanity, a general had to

look to the total cost of the war in lives to a far greater extent than he has had to do since. He was not greatly concerned for the local or regimental loss, for regiments were only to a small extent territorially recruited, but he had to consider the gross cost of the campaign on pain of his sovereign's displeasure ; and one big battle which ended the campaign, even if it cost half his force, was cheaper in the long run than a straggling, marching campaign in which men wasted away almost hourly. As we shall presently see, it was this exaggerated anxiety for the individual when not on the battle-field which ultimately gave Napoleon his opportunity.

While the close-order school had been triumphing on the Continent, skirmishing had been having almost uninterrupted success on the other side of the Atlantic in the struggle with France for Canada and subsequently in the revolt of our Colonies.

Here the conditions of existence, both social and topographical, practically forbade close-order fighting, except in the rarest instances. Though the colonists fought on foot, and hence were without the advantage of Boer mobility, in many other points they had an even more marked superiority over regular troops than our present adversaries. They were most expert woodmen, and had all their individual fighting qualities trained by generations of conflict with the Indians, whose methods rendered them far more dangerous adversaries than the Zulus in South Africa, and almost throughout they had the advantage over us of the possession of rifled arms, the drawbacks of which, viz. slowness of loading and necessary exposure whilst doing so, which rendered them unsuitable at that time and for many years afterwards for Line troops, were reduced to a minimum in the dense forest and swamp land on which so much of the fighting took place. Mechanically, no doubt, these rifles were crude productions, but in accuracy and range the contrast with the old Brown Bess was enormous, and enabled their owners to pick off our officers and harass our columns with far greater facility and safety than the Boers have ever enjoyed. It seems nowadays to be imagined that the sniping of officers is quite a modern invention of the Boer ; but, as a fact, it is as old as warfare itself, and could obviously be carried out more easily at ranges of 200 yards and less, than at ten times the distance, for the limits of human eyesight remain always pretty constant, and it is easier to distinguish the badges of rank at 100 than at 1000 yards distance.

Neither is it the case that we adhered to our conspicuous colours of dress and distinctions of rank out of pure War Office stupidity. On the contrary, there were, and still are, very good reasons for both, which it may be as well to recall. The old brick-dust red,

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which we then wore, the mass of well worn tunics and hose, the broken pipe-bellows of the Prussians, the broad down of the English, the most delicate of the French, the green of the Dutch, the lights of these woodlands they were all as the following little

I was dining some years ago at the table of the Prussians, and on my right sat an officer of the Prussians, recently been transferred to this conversation he remarked to me, "a practical nation!" I was naturally suggested that, on the contrary, we Prussians bore the palm in this matters.

To this he demurred, but admitted that he had come to Brandenburg that he had fact. I asked him to particularise, and to my surprise, the "colour of our myself always been a firm believer, but heard praised by any foreigner. He the past autumn the Brandenburg garrison against the troops in Rathenow—which is northward—where the Zeithen Hussars, quartered, and that these brick-red tunics, their existence, as over the heather and prevailing features of the district, they compared with the white coats of the blue of the Dragoons. They had all that they had carried out experiments graphed paper targets (the ordinary "figur on the range were for instructional purposes in Germany) representing the red Hussars far the most di uniforms, and had found the red Hussars hit, even at relatively short ranges, their ranges being most the trees in the neighbouring pine forests.

As regards the question of fighting in the open, the is more complicated, so many conflicting conditions have reconciled. There is strategic concealment and tactical ment. It was as necessary to mark the movement of columns then as it is now; and more difficult to conceal the fact, because the distance at which these turning marches

* Lord Howe's Light Infantry, raised in America about 1756, had and were in every respect a model for forest-fighting troops. See Fortescue's of the British Army.

carried out *very much less*. Here red had a greater advantage over all darker *colours*.

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which we regard *the whole question turns on the point of view from* the individual *fighter, no doubt, feels himself at a disadvantage ;* in a coat which *has been taught to believe most conspicuous ;* but the G.O.C. *very little think of the mass, not of the individual,* and it needs *nothing end experience to convince most intelligent* men that *everything reduces very largely increase the prospects* arms to a common *victories.* of victory, and *the total cost of a war more than a* sequence of decisive *when a whole army fought on a couple of*

In the old days, *though a whole army fought on a couple of* square miles, it was *comparatively easy to follow the movements* of each closed body, *the smoke often proved a serious* embarrassment. *Nowadays, when even a moderate Army may* easily cover fifty square miles, the advantage of being able to quickly distinguish *what each unit is actually doing would obviously* be an enormous advantage. *Generals do not want their best plans* upset by artillery firing into *their own men or ceasing to fire on* the enemy through inability to distinguish their nationality ; and every junior aide-de-camp *must realise the greatly increased* difficulty of conveying an order to the right man when all are dressed exactly alike. Yet thousands of lives may depend on its correct and punctual delivery.

To prove the advantage of an inconspicuous uniform, even to the individual, it would be necessary to accumulate evidence to show how many bullets in action actually hit the person for whom they are intended, or even that the man most aimed at was the one most frequently hit. I know of very many instances to the contrary, and can recall only one in favour of this theory, viz. General J. E. B. Stuart, identified by his scarlet cumerbund, and picked off by a Federal marksman with telescopic sights at 1000 yards ; but this was in a lull before a general action, when careful aiming was still possible. Against this we may set Skobeleff on his white horse in white uniform, who escaped scathless, horse and rider, throughout the whole Turkish Campaign ; or Nugent, on Colville's Staff at the Modder River, the only man on a white horse that day in the British Army, and consequently the most conspicuous, but he was never touched.

Finally, there is a point of view which the faculty of opportune evasion the Boers have displayed has for the moment obscured. When Infantry, who cannot get away on ponies, stand to the last, there must come now, as formerly, a time of confusion and disorder,

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when the officer's example and all-important. What he wears weapons in use and his chance of Bess at ten yards was even more rifle, for if its bullet hit you, you more officers will be hit in proportion to their quality as leaders which they do their duty, and I take as they have the true qualities of any distinctive badge which renders When Jacob gave his officers of he knew perfectly well that this head and less comfortable than the men's immensely it facilitated rallying, and, the lesser for the greater.

To return now specifically to the as we all know, we lost the Colonies power failed us, and hence our superiority brought to bear against them; but this dawned on the Americans until Mahatma other day—still less on the numerous who had been aiding them in their struggle to France, and their experiences, it may be in the telling.

Though officially France was fully close-order drill-book, the attempt to with scant recognition amongst the rank Partly this was due to the entire nationalities, more particularly, however, everywhere experienced in adopting in customs out of sympathy with the result of The would-be imitators too often mistake of model which they have only scanned superficial own and their men's time in pedantic attentiveness quite unessential to the great points at issue. powder and pig-tails—they would have four cropped hair like our Roundheads, but—the Pr and pigtails, therefore we all had to follow suit as strongly resented by British as by French seen something of the same kind in far and ought to be able to understand the French Other and deeper causes were also at Army. Regimental commands were given to young men of good family, who could afford

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on tactical subjects, and projects in Paris as to-day in London.

Foremost amongst all came published in Paris his 'Projet d'infanterie.' "Plesions" were really into squads of sixteen files twelve pamphlet lay in the fire preparation by his little columns. Then followed Guibert, Joly de Maizeroy, who skirmisher and column idea (1766). of these works. Then followed Guibert his day, with his 'Essai general de London and Liège. He had visited courteous attention from Frederic the undeniable talent. Previously he had freely and on insufficient information straight, and he came back fully conversant but with a better grasp of the principles brother officers who had stayed behind.

Now the paper war between the earnest, and pamphlets quite in the mode. Durant made considerable progress, and opportunity of exhibiting his ideas in 1774 four years later at Vassieux, near Bayeux, forty-four battalions were concentrated, and direct the operations, though the chief command the Duc de Broglis.

The result was that a kind of compromise the Duke's sound sense and practical considerably the doctrinairism of Menil's proposals was satisfied, and, of course, both put the laurels rested with Dumourriez wrote, "True tactical skill consists in movement of masses, not in pedantic adherence—a view as true now as then.

Tactical feeling now ran so high that it well as the camp, "Agitait les savants et les grandes dames et leurs amants," and numerous All of which at least shows that the nation in things military. With us they would on War Office."

Even the retired and aged Prince de L battle, and his shrewd, witty words deserve to forms the column, and courage develops the

thought that the celebrated column of Fontenoy originated because both wings tried to avoid the fire of the opposing batteries : 'le centre devenait le tête, et M. les generals perdurent les leurs.' I have never seen a battle in which hundreds of columns were not formed which I and my corporals sought to drive asunder with our sticks. Were I a Frenchman, then I certainly would not care to call a battle order which originates out of terror and want of discipline, 'French.'"

Affairs were still in this state when the Revolution broke out. Officially French Infantry were to fight in line, like the Prussians, but they had practically destroyed their old Army, and had to make the best of things without.

Still, this wordy warfare had not been without very important influence. Whilst it raged, men had been taught to think, and those who were now about to obtain their opportunities came to the front with fully alert minds.

It is very difficult indeed to present the tactical progress from 1740-1790 in a consecutive readable form. Opinion varied so widely according to locality, and in the absence of all means of rapid intercommunication, ideas were dead in Paris before they had reached Berlin, sometimes *vice versa*.

I have tried to group together the salient points which are necessary as a foundation for subsequent chapters, but have been compelled to leave very much untouched, which is nevertheless of great interest to all specialist historians. For their benefit I subjoin a list of authorities arranged in chronological order, taken from Max Jähn's 'Geschichte der Kriegs-Wissenschaften,' an invaluable guide through the labyrinth of ordinary catalogues.

PRUSSIA.

- 1740-1743.—Frederic II.'s 'Orders and Instructions.'
- " " 'Infantry Regulations,' 1st October, 1743 and 1748.
- 1748.—Frederic II.'s 'Instructions for the Major-Generals,' 14th August.
- 1759.—Revise of above, 12th February.
- 1763.—Frederic II.'s 'Instructions for the Regimental Commanders,' 11th May.
- 1768.— " " 'Von der Infanterie.'
- 1770.— " " 'Von denen Frey-Bataillons.'
- 1773.—'New Infantry Regulations.'
- 1773.—Frederic II.'s 'Regulations for a Bataillon Commander.'
- 1778.— " " 'Instructions of the 5th February.'
- 1779.—Appendix to the Regulations of 1773, dated 1st October.
- 1780.—Frederic II.'s 'Instructions for the Inspectors,' 6th April.
- 1783.— " " 'Instructions for the Light Infantry.'
- 1773.—Graf von Schmettau's 'Die Preuszische Infanterie.'
- 1774-1779.—Von Gaudi, 'Taktische Versuche u. Verhaltensbefehle.'
- 1775.—Frd. von Saldern, 'Taktische Grundsätze u. Evolutionen.'
- 1780.—Prinz von Hohenlohe's 'Vom Bataillon.'
- 1780.—Frhr. von der Goltz, 'Von der Preuszische Infanterie.'
- 1787.—Frederic William II., 'Regl für die Leichte Infanterie.'
- 1788.—'Regulations for the Infantry,' 13th September.
- 1789.—Instruction betr. des exercirens der Schützen.
- 1798.—Frederic William III., 'Instruction f. d. Infanterie,' 11th March.
- 1798.—Von Boyen, 'Über die Änderungen unter Friedrich Wilhelm III.'
- 1798.—Berenhorst, 'Über das Tirailiren.'

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AUSTRIA.

- 1749.—Graf von Daun, 'Regulament u. Ordnung für das k.k. Fusz Volck.'
1749.—Belehrung wie der Feind mit Fusz Volck anzugreifen.
1759.—Graf von Lacy, 'Dienst und Exerzir Regulament f. d. k.k. Infanterie.'
1798.—Arch-Duke Charles, 'Verordnung über dasz Exerciren.'

FRANCE.

- 1750.—'Ordonnance du 7^e Mai.'
1753.—'Reglement s. l. service de l'Infanterie en Campagne.'
1753.—'Ordonnances du Roi concern l'Infanterie ordinaire.'
1754.—'Instruction pour l'Exercise,' 14^e Mai.
1755.—Menil Durant, 'Projet d'un ordre français.'
1760-1766.—Various works by De la Noue, Devair, Durivat, Sinclair, Joly de Maizeroy.
1764-1766.—'Ordonnances d'Exercise,' 20th March, 1764.
1764-1766.—" " " 1st January, 1766.
1769.—'Instruction aux troupes légères.'
1770.—Guibert's 'Essai general de tactique.'
1772.—Pamphlets, etc., by Menil Durant, Du Pugets and Du Coudray.
1773.—Joly de Maizeroy, 'La Tactique discutée.'
1776-1779.—Pamphlets by d'Arçon, De Rohan, De Ligne.
1777.—'Tactical Experiments at the Camp of Vassieux.'
1780.—Further pamphlets: Menil Durant, Guky Grimoard, Turpin, Poulitret, De Lessae.

NOTE.—Since the above list was compiled a perfect mine of information has been opened to us by the labours of the historical section of the French General Staff. Amongst these Captain Colin's 'L'Education Militaire de Napoleon' and 'La Tactique et la Discipline dans les Armées de la Revolution' are particularly worthy of attention.

CHAPTER II.

Troubles of the French Infantry—Example to the nation set by the Army—Origin of Napoleon's best marshals—Amalgamation of Volunteers and Line in 1796—Parallel with the Boer War—Mobility and numbers—Early experiences of the French—The travelling guillotine introduces a new school of discipline—Evolution of new order of fighting—Contrast with the old—The blow of Frederic *versus* attrition of Clausewitz—How the old school endeavoured to meet the new—The year 1796—Buonaparte and the art of command—The means at his disposal—Deterioration of Prussian Army and its causes—Degradation of the position of company commander—Difficulties hampering the training of skirmishers—Dietrich von Bülow and the Prussian Line—Cause of Prussian defeat at Jena.

IN my 'Cavalry: its Past and Future,' which originally appeared in the pages of the *United Service Magazine*, I called attention to the special conditions which wrecked the French Cavalry during the early years of the revolution. The Infantry, of course, suffered somewhat similarly, though not to the same extent, and being Infantry, moreover, they were able to shake off their disadvantages with less permanent evil than the mounted Arms.

The loss of the Colonels of Regiments mattered little, for as already pointed out, these rarely came near the Regiments. Amongst the junior officers the proportion of typically aristocratic names was small, and those of the country aristocracy were Frenchmen first and royalists afterwards; in the ranks and throughout the population there were large numbers of intelligent men who had gained experience in Canada or in foreign Armies. Kleber, for instance, in the Austrian Army; Augereau in the Prussian; La Fayette in America; and these men, when the pressure came, sprang to the front on the survival of the fittest theory. Desertion in the regular Army very soon ceased; things were so bad all round that even with their pay months overdue, the men felt themselves safer in the ranks with arms in their hands, than as units in the civilian crowd. Moreover, discipline and that wider patriotism which comes to the soldier spontaneously when he serves beyond the seas, had an enormous effect on keeping men faithful to the nation and the *de facto* authority, if not to the King, and I know of few more instructive chapters of history than are to be found in the life histories of these men, who, through good and evil report,

deserted by their nominal leaders, robbed and neglected by the government of the day, nevertheless remained faithful to France, and when the time came proved foremost in her regeneration.

It was from these men that the great majority, one might almost write all, Napoleon's best marshals and generals sprang. The "Volunteers," with their own officers and fancy names, did little enough, and it was not until in 1796, when the Line and Volunteers were amalgamated in battalions and the last vestige of the "caste" system destroyed, a few days only before the opening of Napoleon's celebrated Italian Campaign, that the real career of victory began.

The early campaigns of the Revolutionary levies afford a broad but very striking parallel to the recent Boer War. What the Boers were at first able to accomplish against us by mobility, the French achieved by numbers and mobility combined. They were close to their resources, and the nation was very much in earnest. The Austrians, Prussians, and British, though very far superior in training and discipline, were far from their bases, and the Governments very lukewarm. The brunt of the fighting fell on the former, who had some 700 to 800 miles of communications behind them, much of it exposed to French inroads, and 700 miles across country in those days meant considerably more than 7000 in these.

The earliest efforts of the French at fighting in open country were the reverse of inspiring. They attempted, according to their drill book, to fight in line, but the men could not stand up to the punishment, and whilst the braver ran to the front and fought as individuals, the others formed columns, as De Ligne, referring to earlier days, describes, and were ridden down and dispersed by Cavalry, as I have elsewhere related.* They then instinctively took to broken ground, forests, great heaths, etc., which favoured their peculiar methods, and they were able to do this with advantage, because, having no magazines, they were more independent of roads, and being essentially "national," they bore hardships and privations to which regular troops could not be submitted without risk of desertion. They suffered of course, too, from desertion, sometimes on an unparalleled scale, but it was local and temporary; things were worse for the deserters at home than at the front, and the men having got over their panic, or bad temper, hereafter became soldiers by inclination.

Meanwhile the pressure on the leaders to secure success became

* Charges of the 15th Light Dragoons at Villiers en Cauchier and Cateau Cambresis, of the Austrians and Prussians at Handschuhsheim, etc. U. S. M., November, 1900, page 595; or 'Cavalry: its Past and Future,' page 127.

ever heavier. The travelling guillotine behind and the Representatives of the people at the front, left them no choice but persistence in their task, and by degrees the sternest of all forms of discipline, that which the individuals of an Army mete out to their comrades in self-defence, without any legal formalities at all, sprang into existence. The stronger natures simply drove the weaker into the fight, and when beaten back, rallied them and drove them back again. There was no pity for the cowards in those days, and there could not be, for men's own heads were at stake.

The men being entirely wanting in the steadiness and drill training which line firing and manœuvring required, no other alternative but attacks based on the courage of the individual remained, and those who had studied the pamphlet literature of the past twenty years, soon saw how to bring method into their proceedings and cohesion to their tactical fabric by recourse to the small columns, and thus step by step a practice arose which bore such close resemblance to Menil Durant's proposals that he has ever since received due credit for its invention (particularly in England), though personally I cannot find evidence which satisfies me as to his deserts. On the contrary, I see only a practical solution of an emergency entirely unforeseen by the theoretician, whose scheme was inapplicable to the conditions he had in his mind's eye at the time, and if applied to them would have deteriorated instead of improved the fighting value of the troops as they actually were. His was not the solution that commended itself to our more practical soldiers Howe, Wolfe, Amherst, and Moore, as we shall presently see, and all arguments for the use of individual order in regular Armies based on French successes during these and subsequent years, appear to me baseless, for reasons I hope presently to develop.

In the years preceding the French Revolution, when two Armies met in the open field, every effort had been made to reduce skirmishing to its lowest possible limitation, to avoid unnecessary waste of life—in the open, skirmishers decided nothing, but got in the way of the true fighting machine, the Line. The whole object of the rival commanders was to fall suddenly upon some one fraction of his enemy's formation; generally his flank, and crush it suddenly by a concentrated hail of fire, which should exterminate everything before support could arrive.

This ideal was sometimes very nearly attained, the first volley of the British Guards at Fontenoy dropped 640 of their adversaries, probably 70 per cent. The "perfect volley" at the heights of Abraham practically won the battle. At Crefeld, a single Prussian volley stretched out 70 per cent. of the opposing force, and

other instances could be added from the battle histories of the period.

As a consequence battles were very short in duration. A couple of hours might suffice to destroy a whole Army, as at Roszbach, or Quebec; but the intensity of the fighting during that time was tremendous, and whole units were wiped out with a suddenness for which recent warfare furnishes us with no parallels at all. It is hardly necessary to point out that the demand such fighting made on the discipline of the men who had to stand up to it, was very severe indeed, or that the generals who felt that their men possessed it were not likely to view with equanimity any relaxation of their cohesion in anticipation of what the enemy might inflict upon them.

When, therefore, the French hordes came down on the Austrian and Prussian lines, and by their numbers outflanked them, the latter found themselves compelled to break up their line into several smaller sections, in order to oppose strategically an equal front. Of course in doing this they formed a number of fresh fronts liable to be tactically turned; but this was the lesser of two evils, and might be overcome to a great degree by taking advantage of natural or artificial objects of the ground, villages, woods, etc., as flank supports.

The general idea was to oppose frontally a passive defence of localities, while detached commands manoeuvred to attack the enemy's flanks, and this they felt they could afford to do, because at first their fire power was ample to deal with the average French attack. But as the French steadied down during the second and subsequent years of the fighting, and after the invention of the portable guillotine to accompany Armies in the field, the French attacks would be renewed again and again. Ultimately the Defender's ammunition gave out at some one point, probably before the turning movement had time to take effect, and then to avoid a general disaster, the troops would be called off all along the line for an orderly retreat.

Nothing, however, occurred in any of these local fights to shake the confidence of men or officers in the general superiority of their tactical methods over those of the enemy. On the contrary, the punishment the fire of the line frequently inflicted on the French was enormous, and instances were not uncommon where garrisons of a couple of battalions or thereabouts actually buried more French dead than their own numbers after a day's fighting; but no endurance of the troops could counterbalance the want of numbers and of mobility, or compensate for the absence of business-like methods in the War Offices of the period, and step

by step, year by year, the Austrians were driven out of the Netherlands down the Rhine and across the Black Forest, where at length the difficulty of communication began to tell on the French, and the personality of the Arch-Duke Charles in 1796 turned the scale in favour of the Austrians (Prussia had already retired from the coalition two years previously).*

This year, 1796, marks the commencement of a new era of warfare. Hitherto no great genius had appeared in the arena, and though in both Armies many leaders had been made very markedly above mediocrity, they had all lacked the essential quality of genius, the power of controlling, not of being controlled by circumstances.

On both sides the men were too loyal to the governments behind them, and the governments were of course the product of the people. If the people were constitutionally careless of their duties, tolerant of petty dishonesty, lying and slandering, the departments on which the efficiency of the Army rested, were corrupt and dishonest too, and the unfortunate leaders at the front could not obtain first-class fighting and marching from bare-footed, half-armed, and famishing men. Whatever may have decided the results of these four years, it certainly was not the tactical formations.

Neither did Buonaparte at first introduce any changes in this direction, but he fought to win, not merely to avoid the guillotine, and recognising the essential weakness of the Austrian system of small detachments dispersed over an abnormal front—the “cordon system,” as it was then called—he united every available man on a fraction of the Austrian front, and by dint of that “art of command” which defies analysis, induced and compelled his men to “go on” with an energy and recklessness they had never attained before.

It is usual to attribute this new-found energy to the dazzling bait of plunder he held before them, but, apart from the fact that there is some reason to believe that the celebrated order to the Army of Italy,† promising them the plunder of the cities of the plains, was never issued by him at all—it seems very doubtful to me whether such an appeal to such an Army could have had one tithe of the effect imputed to it. Republican Armies had always looted, with or without invitation from their commanders, but the point was that the Austrians had hitherto proved more than able

* See the most interesting monographs on these campaigns published by the Prussian and Austrian General Staffs, and compare Colin's ‘*La Tactique et la Discipline*, 1794.’

† See Bouvet's ‘*Campagne de 1796 en Italie*.’

to protect their own, and the promise given by a relatively untried leader to allow men to loot property they have been endeavouring to get at by every means in their power for several years, was far more likely to incite ridicule with the keen-witted French, than to inspire confidence.

It must be remembered that, not only was the Army he took over dispirited by successive reverses, and by neglect and privation to an unusual degree, but that Buonaparte himself was years younger than his Division Generals and Staff, and literally did not know the very names of things which had been familiar to them when he was a baby in long clothes. Yet within two months he had won them all over, and though in the opening weeks of the campaign he made many mistakes, often placing his troops in the most critical situations, which they were quick enough to see, and though he poured out their blood like water, sometimes needlessly,* yet from the very first he acquired that devotion from the men in the ranks which never failed him to the very last, and the power to achieve such results is a psychic gift which we must recognise, even though we cannot explain its origin.

It was this campaign of 1796 which first revealed his power to himself. In a letter written towards the close of the campaign, he tells us that it was not till the night after Lodi that he realised that he was above the run of ordinary men, and might one day rise to undreamt of heights, and from that time forward fortune helped him, as perhaps no other mortal was ever favoured.

Egypt, and the circumstances of his return, must have killed any average reputation; but things had gone so badly in his absence—the French had lost all Italy—that the whole nation hailed him as the deliverer, and the campaign of Marengo welded the links that henceforth bound all France to his victor's chariot. The Consulate dragged along a couple more years, but from the night of the 14th June, when the independent initiative of a cavalry leader at the head of 300 horse turned defeat into victory on the field of Marengo, Napoleon was virtual master of France, and exercised almost undisputed control over her vast resources.

But the essential military mechanism had been already created for him; not only had the talent of his predecessors provided him with an organised Army and tactical methods, worked out in the field from Menil Durant's theoretical suggestions, but Jourdan's law of conscription had furnished him with the sure and certain supply of "food for powder," which alone rendered his strategy possible, and at once emancipated him from the trammels which for years afterwards still hampered the movements of all his

* The repeated assaults on the Castle of Cossaria, for instance.

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adversaries. He could afford, as he brutally expressed it, to "expend 30,000 men a month," and all Europe together had no organisation which could ensure a certain supply of two-thirds that amount.*

This is the true secret of all his subsequent successes, and no discussions on strategy or tactics which ignore this essential fact can lead to useful conclusions. Other nations now can afford to neglect this point, their laws supply the needful waste of men—but we cannot—and when a great war again breaks out, they will buy their experience at a gross cost of men, which will leave them economically crippled for years to come. Many men in Prussia already begin to see this clearly—foremost amongst them Malachowski—but the legend of Jena still holds its own too firmly, and they cannot yet see the wood for the trees.†

We may leave the French for a while to perfect in further active service the system of individual fighters and small columns they had arrived at, and turning again to the Prussians, note the rapid deterioration which set in after the trained veterans of the Seven Years' War had passed away from their ranks. In the main this was due to the super-centralisation of all affairs in the hands of Frederic the Great himself, and the paralysis which necessarily resulted on his death; but there are some minor points applying specially to the Infantry which have hitherto been very generally overlooked, and which copied by us have retarded our progress for generations.

Previous to the final elaboration of the Prussian Battalion drill, which became the model for all Europe, captains were the actual company commanders, responsible both for the drill and efficiency of their men; but in the Battalion the very name Company disappeared, for the Battalion was divided into eight equal portions, called "pelotons" (Anglicè platoons), and the captain took over on the drill ground a platoon which might or might not contain

* See Lettow Vorbecke, 'Krieg von 1806-7.'

† The point is simply this—which is the most economical method of fighting—to lose say 70 per cent. of a Division and inflict a crushing defeat on your adversary in a couple of hours, or to engage hundreds of thousands all day long, losing a uniform ten per cent. throughout the whole, with no specially decisive result to show for it? Arms being everywhere nowadays practically equal, there is nothing in the nature of things to prevent an approximation to the former type, but to do so we want a method of training which will enable men to stand up to the heaviest punishment, for you cannot tell on which Division the brunt of the fighting will fall; but our modern theories which would substitute the individual action of thousands for the collective blow of the mass directed by the brain and will-power of the commander are not likely to give us the type of soldiers we require. I do not criticise our tactics in the Boer War—as I hope to show hereafter these were a legitimate adaption of the means at hand to the very special circumstances of the case—but we are not likely to be called upon to fight in South Africa again. —Written before the Russo-Japanese War.

the whole of his company or only a part of it. This at once struck at the responsibility of the captain, whose men no longer of necessity looked only to him. It may have had very little influence in war, but in peace it took all his interest out of his work at once, and in proportion as it was weakened, the power passed into the hands of the Battalion Commander, and ultimately to the adjutant and sergeant-major.

But skirmishing and shooting can only be taught by individual attention, which of course cannot be given by one man to a whole battalion, and hence the difficulty everywhere experienced in securing a fair trial of the various skirmishing regulations introduced in all Armies as a result of American experience. Where a whole Regiment had been on service together, and had been formed into Light Infantry, as was the case with several of ours, a working tradition was formed, and has endured more or less, in proportion to the Regiment's war services ever since. But where, as in Prussia, only isolated officers had seen this nature of fighting, the new ideas only got a chance, if it was the Commanding Officer himself who had been at the front ; and writing from recollection I think there were only two Prussian battalions which had this advantage. Those who returned as captains only had no opportunity, and the disbanded "Freischaaren," to which I have referred before, had left such a bad reputation behind them, that the attempt to reintroduce their fighting methods was anything but popular.

Moreover, as I have pointed out, the French style of skirmishing was very different to that of the colonists, and had not as a fact done anything so remarkable as to shake the faith of the older officers in their tried and proved old-fashioned line.

Hence, in spite of the vivid attention the successes of the French aroused, and also largely in consequence of the intemperate manner in which their admirers advanced their views, very little sound progress was made ; and the regulations, good enough in their spirit, were interpreted only in the letter, with the result that men's minds were unsettled, confidence was shaken in the old forms, and much of the work which ought to have been left for the enemy's bullets was already accomplished by indiscreet reformers before even the outbreak of the war.

Heinrich Dietrich von Bülow was, perhaps, the most conspicuous amongst the new school. He had served in America, and closely studied the French Army, and possessed that "fatal facility of the pen" which has proved so dangerous to many a talented man. The following is a specimen of his style, and one can imagine the resentment such over-statement and exaggeration

must have provoked amongst the old school of Prussian officers ; probably it would have fared no better with our own. Describing the advance of the Prussian Line in action, he says—

“Let us take the simplest example, the advance of a line straight to its front. It is necessary, first of all, to place a line of points and carefully dress the men on them ; all this takes some time ; then the word is given, and the line steps off, seventy-six paces to the minute, rigid and silent, every man afraid of the stick, and praying that they may not encounter a ploughed field, a mole heap, or half a dozen heavy flint stones. These sorts of things ought not to be on a battle-field, they upset the order too much ; nevertheless they sometimes are there, and then it is very inconvenient. Suppose, for instance, a six-foot ditch is met with ; what is to be done ? A peasant or poacher would jump across it, but with troops it is not to be thought of ; their trowsers are too tight, and the soldier too stiff and weary. . . . But I have said nothing of the two boys and the two old men (the guides and the sergeants), who are to give the time to the whole battalion, which has to look to them to keep the step, although every rational man prefers to look in the direction in which he is going, *i.e.* to his front. One sees such tactics are not based on anatomy, but what then ? Nature must bow to art, and the man must be taught to squint.”

It is all very funny and picturesque, but it is not convincing, for we all know very well as a fact that it took something more than a six-foot ditch and a ploughed field to stop the line when it meant going, as Prague, Torgau, Salamanca and Albuera have proved, and we have no instance of similar resolution displayed by men trained to “stalk” their enemy and advance “like a swarm of Iroquois Indians,” to quote his own words. Nevertheless he was the real inventor of the phrases, “We must learn to organise disorder” and the “battles of the future will be decided by skirmishing fire,” which latter phrase can only be regarded as a prophecy if we assume him to have had foreknowledge of the advent of the magazine rifle, with its long range and flat trajectory, together with the ultimate adoption by all nations of the system of universal service, which, at the time he wrote, lay still very much in the future.

I have called special attention to his work because it has generally been assumed in Germany that the events on the field of Jena some few years afterwards conclusively proved his claim to rank as a prophet.

Superficially regarded, it looks as if this claim could be substantiated, but if we analyse the evidence a little closer it becomes merely a coincidence.

The Prussian Line was defeated and the French fought mainly as skirmishers, but the victory shed no light on the superiority of either system or the reverse. To prove his case it would have been necessary for the two Armies to have been trained each in their own system under identical conditions, which was very far from being the case. The French, as we have seen, had been trained exclusively in war, had six years of almost continuous victory behind them, and at the time had hardly a recruit in the ranks. The Prussians, on the other hand, had not only been trained in peace, under conditions even more detrimental to their efficiency than those we now enjoy at Aldershot, but for the most part their men had actually less continuous service than our present Militia ; for reasons of economy had gradually reduced the actual service with the colours to only one month in the year, and one month in those days, when it took three months' drill to teach a man to load and fire even twice a minute, counted for much less than a month now, when a man can be taught to load his weapon in half an hour—a point very frequently forgotten. Marwitz's Diary is again a principal authority on this period, and to judge from his evidence, the field training of the Prussians was then actually below the present standard of our Militia and Volunteers.

To make matters worse for them, the men were nearly starving, for nothing, not even firewood, might be taken from the inhabitants without due authority and payment. On the 13th October, 1806, the town of Jena was full of provisions, and application for permission to purchase had already been made to the "Kriegs Commissair" at Weimar (none other than Goethe himself), when the Advance Guard of Lannes' Corps broke into the place, carried off what it could, and burnt the remainder under the eyes of the Prussian troops drawn up on the plateau above. There was ample wood quite close to their camping grounds, but the Grand Ducal authority not having been obtained, the men dare not cut it, and lay down fireless and supperless to snatch what little sleep they could in the cold and raw October night. I may add that they had no great-coats, and many of the muskets had been fifty years in the service.

These were no conditions to meet a war-trained, confident adversary, but the spirit of discipline, their *esprit de corps*, was still powerful, and regimentally still in ignorance of the awful incompetence of their leaders, the men went forward to meet their doom next morning full of confidence in their fighting power.

The above may seem incompatible with what I have previously said as to the short time of actual service with the colours, but it is not really so, for *esprit de corps* grows more with the number of years

passed with an association than with the absolute length of time spent in barracks, and it is quite possible for men who have belonged ten years to a regiment to develop an even higher sense of community of interest with their comrades, though only closely associated with them for a month in the year, than they would do if kept perhaps two years in barracks without return to the colours afterwards, a point of great importance in estimating the value of our own Militia and Volunteers.

CHAPTER III.

Prussian attacks at Jena are each locally met by superior numbers—Auerstadt—Prussians fail to use their "*last reserve*"—Heavy French losses—Decay of French Army—Fire power available—The development of field artillery—Case fire—British discipline—Reasons against entrenching—Limitations of a leader's power of action—Relation of soldiers to civilians in Prussia before Jena—Opposition to Scharnhorst's proposals—Cause of change of opinion—Example for us—Parallel between Prussian pamphleteers and our own in 1901—Scharnhorst's comments—Adoption of skirmishers and small columns—Further deterioration in the French Army—Origin of MacDonald's monster column—The "*refractaires*"—The evolution of the British infantry—Extract from Mitchell's works.

OF the strategy which preluded the battles of Jena and Auerstadt I have spoken in my 'Cavalry: its Past and Future;' here it is enough to dwell upon the essentially Infantry side of the actions. At Jena the Prussians made four successive attacks in line in echelons, but in each case with barely half the numbers actually available on the ground, far fewer than those the French had at hand to meet them, and French numbers ultimately told; but the men fought splendidly, and fell in lines as they stood, exacting a terrible payment from their enemy. But no courage or devotion could compensate for the utter incapacity of their leaders, and in the end they drifted slowly backward until utter exhaustion, want of ammunition, and the approach of the French Cavalry, led to a panic, and the whole Army was swept away in disorder.

At Auerstadt the troops were more evenly matched, for, there being but a single road behind them, neither could deploy more rapidly than the other. The fight fluctuated as fresh-formed bodies arrived on either side, and when Davoust had about reached the limit of his numbers, the Prussians had still some 20,000 to come.

At this moment, fortunately for the French, the Duke of Brunswick was mortally wounded, and all power of direction on the Prussian side suddenly ceased, for the generals refused either to accept responsibility, or receive orders or suggestions from the Staff, and Kalckreuth, commanding eighteen battalions of the Guards, the picked Infantry of the Prussian Army, stood looking on motionless, whilst the French, by a superb effort, threw off

their assailants and in turn began to advance. The Prussians then fell back, and Kalckreuth covered the retreat which, but for his miserable and unsoldierlike inactivity, might never have become necessary at all.*

The French, however, suffered pretty heavily for their victory, and their losses, 28 per cent., were the heaviest price they had yet had to pay since the commencement of the Revolution. It was the last time also that skirmishers and small columns sufficed practically unaided to achieve success, for on the next great battle-fields of Heilsberg and Eylau they were tactically defeated and Artillery masses and heavy columns were required to turn the scale again at Friedland.

Partly this was due to the deterioration which now began to set in with the French Infantry.† The last three years had been a heavy drain on the country, and the losses in hospital and on the march enormous. Moreover, as it began to leak out that service, though normally for five years, was actually for life, the better class of recruits began to shirk conscription; they either provided paid substitutes, as the law allowed, or they bolted altogether, and recapture in the then unsettled state of France was far more difficult than it would be in the present day.

The disastrous results of over-extension of front had also not escaped the attention of their opponents. At Stokach, in 1800, some 30,000 men had occupied a front of nearly 30 miles, quite in South African fashion. Now the number had risen to 30,000 to the mile, and as the unreliability of the troops increased and the danger of defeat loomed larger, even 50,000 to the mile became common.

Of course the fire power available against any particular rush, did not grow in the same proportion; that was limited by the number of ranks which could fire simultaneously—three or four according to custom—but in column loaded muskets could be exchanged, so that a very large amount of lead could be delivered in a minute; still probably want of drill in these hastily raised armies prevented them at their best from equalling the weight of bullets thrown per yard of front from the old Seven Years' War line.

Whatever the rate, it proved in practice sufficient to keep skirmishers at a respectful distance. These no longer sufficed to prepare the way for the following small columns, which would

* The best authorities are Lettow Vorbecke's 'Krieg von 1806-7'; Lehman's 'Leben Scharnhorst'; Von der Goltz's 'Roszbach und Jena.' None of these books were published when the late Colonel Home wrote his 'Précis of Tactics.'

† See also my 'Evolution of Modern Strategy.'

have been swallowed up in the big ones if they had ever reached them. Recourse, therefore, was had to the Artillery, which, in the meanwhile, had evolved sufficient mobility and discipline to meet the required task, and whose fire power at case-shot ranges was very materially greater than that of modern B.L. guns of equal calibre at shrapnel ranges, for not only does case hold more bullets than the shell, but case fire requires no accurate aiming, whereas shrapnel fire does, and the old short M.L. guns of that date could get off ten rounds a minute if pressed. I have seen nine fired from a 9-lb. R.M.L. gun at Shoeburyness myself. Thirty of these guns occupied roughly 500 yards of front, and assuming the weight of each bullet in the case as the same as that in the modern shrapnel, they could deliver roughly $300 \times 10 \times 30 = 90,000$ bullets a minute, at least double the number a line of infantry of equal frontage could get off in the same time, with a far lower probable percentage of misses, for the guns' nerves cannot shake. What becomes of the "unprecedented" and "appalling" fire of the Boer War after that?

Yet men were actually made to stand up to this fire, closing their ranks after every discharge, and it is ridiculous to suppose that this was exacted of them by their leaders without due consideration of all alternatives.

The truth is that after Austerlitz and Jena there were no troops left on the Continent of Europe which could be trusted to stand in any less dense formation against the threat of a Cavalry charge, which they had always to be ready to meet. It might be bloody, but it was at least effective up to a certain point, and here comes in the economy of the highest possible standard of discipline.

Because British troops had never been subjected to crushing defeat at the hands of the French, when we entered on the Peninsular War we retained a far higher standard of endurance than the armies which had to be practically re-created in face of the enemy. We could, therefore, be posted in line two deep (though at Waterloo the Duke formed some regiments four deep), and being only two deep, could lie down with safety and an immense diminution of loss. The need for instant support at each and every portion of the line being less, we could form our lines at greater intervals, with a further diminution of loss, and we required fewer men to the mile, which enabled us to occupy a wider front and thus tended to the security of our flanks.

It is almost natural to ask why, under these circumstances, continental troops did not have recourse to spade and shovel as in

the past ; but there were many reasons which prevented the adoption of this simple expedient, as obvious then as it is now.

There being no time to turn out highly skilled troops, numbers alone could be relied on to determine the issue. These numbers required feeding, and the magazine system having broken down, it became impossible to subsist large bodies of men in contracted positions. Nothing would have suited Napoleon better than the attempt ; he would simply either have manoeuvred his enemy out of every position or gradually have rounded them up and held them till hunger compelled their surrender.

The average newspaper critic, who is always ready at a moment's notice to teach a Napoleon, or a Moltke how to win campaigns, usually imagines that the General is entirely a free agent, and can order his troops about as he pleases. How easy it would be to be a general if it were so ! Actually things are not so simple, and nine times out of ten, if the investigation is pursued to its furthest limits, one finds that a general, even a Napoleon, does what he must and not what he would like to do, the limiting conditions being topographical, social, economical and others, often seeming to bear but the remotest relation to the matter in hand, but inexorably conditioning his action none the less. This is the explanation of the methods the Continental Armies now adopted. To stand meant disaster, to entrench, starvation, so there remained no other way but to meet the enemy with a direct attack whenever they got the opportunity, and with fluctuations this tendency has remained as the dominant military policy of all continental nations to the present day.

Meanwhile the military regeneration of Prussia was in hand, and it is necessary to note the conditions under which it was effected, as for those who will read between the lines, they present many lessons for our consideration.

It had been the policy of Frederic the Great on the conclusion of the Seven Years' War to do all in his power to conciliate what remained of the Civil Population and to reduce in every way the incidence of taxation. Unfortunately with long service the soldiers always tend to become a caste apart, even when billeted on the inhabitants, as was still in Prussia very largely the case. But, as the experience of ages has shown, the soldier is always more acceptable to the women, whatever the colour of his coat, for the simple reason that his temper is more under control, and his training has of course raised him socially above the level of his class in attention to "habits of good order and cleanliness," as the King's Regulations puts it. Hence arise jealousies and rows, and the injured civilian has no difficulty in finding any quantity of



false evidence to convict the soldier in case of a breach of the peace. In Prussia this was singularly easy, for the rules necessary to prevent desertion had given the civilian power over the soldier to a quite unprecedented degree. Things have been pretty bad with us even in this country within quite recent times, but they were a joke as compared with Prussia. And there was yet another cause which contributed strongly to embitter their relations, for the custom of allowing soldiers to work at their trades brought them into direct conflict with the working classes with consequences that can easily be imagined.

Add to all this that since practically no part of the Prussian dominions had escaped the ravages of the War, it was not easily apparent to the unsophisticated burgher that the soldier had earned his keep—he appeared only in the light of an unnecessary infliction whose maintenance had to be paid for out of the civilian's modest earnings, and the makings of a very pretty quarrel are immediately discernible.

So it came to pass that the civilians hated the Army, and when at last it fell before the French, they turned upon it and overwhelmed it with every species of contumely and insult. The Generals were ridiculed, the wounded refused shelter or assistance, and whole townships with Mayor and Corporation at their head went out to welcome the invader.

With this hatred between them it may be imagined with what feelings Scharnhorst's proposals for Universal Service were at first received.

Fortunately for civilisation, the citizens soon found out that they had only exchanged King Log for King Stork, and the scourge of French exactions soon licked the elements of true patriotism into them, and within two years Scharnhorst's act became law and was willingly obeyed, men coming forward readily to put themselves at the mercy of their hated task-masters—as they had hitherto appeared—determined at any cost to be rid of the invaders.

If such a feud as I have indicated could be healed under the pressure of war and invasion within two years, could not we bridge the far lesser gulf between the rival interests in our own country under similar pressure in far less time?

If a soldier and a statesman—Scharnhorst and Stein—could secure acceptance for their root and branch reform under such extremely adverse circumstances, surely our present task ought not to be beyond the competence of some of us. I ask these questions merely by the way. I have only recalled the conditions to show the depth and intensity of the reaction against the old system,

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which swept all branches of society, and which must be borne in mind to understand the wave of revulsion which overwhelmed everything which bore the stamp of the Frederician *régime*—good and bad all went down before it, and it is only within the past thirty years that it has begun to occur to some few deeper thinkers in the Prussian Staff that after all they may have jettisoned some very useful items of their cargo.

The immediate result of the War was a further deluge of pamphlets, from the pens of the Bülow school, of the "I told you so" order, ignoring of course the many other deeper causes which had brought about the phenomena. One might translate them, only altering the dates and place-names, and they would be greedily welcomed by our daily Press* now as authoritative dicta on the latest phase of modern fighting. Target shooting and cover hunting was the burden of them all, and had their advice been followed the last state of the Prussian Army would have been worse than the first.

But Scharnhorst took them at their proper value—he had himself been through the phase before like every man who endeavours to think out the real inwardness of the Art of War—and on one bundle of these suggestions he pencilled his immortal words, "One should teach the soldier to know how to die, not how to avoid dying," and "Skirmishing nourishes the natural germ of cowardice, which, if we are honest with ourselves, lies at the bottom of all our hearts," which latter expression, Berenhorst, one of the soundest military thinkers of the day, also uses, but whether Scharnhorst quoted from him or *vice versa* I have not been able to ascertain.

Ultimately, skirmishers and small columns were adopted, because under the very special conditions of the new short service, it was impossible to think of reviving the Line, and many things had to be done as practical expedients to meet a pressing need, which afterwards gave rise to friction.

Principal amongst these was the regulation by exact prescription of a multitude of details of outpost and advance guard duties, distances between skirmishers and supports and the like, matters which cannot be laid down with accuracy, because they must vary with the circumstance of each particular case, and in a well-trained Army grow out of its daily practice on service; but when instruction has to be provided for hundreds of officers and thousands of men who have never seen these things and have not insensibly grown into them, as they should do, such expedients are inevitable, though they have to be paid for afterwards. The mistake lay in mixing up drill with instruction in the same book, and the evil

* Though written nearly three years ago this still holds good in 1905.

was specially great in an Army so trained to pedantic accuracy in its drill movements as the Prussians, for if the outpost instructions showed on a diagram, say 50 paces between sentries, and sentries 150 yards from their pickets, or if they laid down, with diagrams, the supports 150 paces behind the skirmishers, the saving clause, according to circumstances of the ground, etc., was overlooked, and these distances actually measured out for the men, however ridiculous the result.

Possibly not much harm was done at the time, but, as will be seen, it ultimately became a serious trouble, and had to be heavily paid for in 1866 and 1870.

On the whole, however, the new system worked beyond expectations, for the French exactions supplied the necessary motive power, viz. an intensity of national hatred that drove the skirmishers onward against losses which had never been borne by loose formations before or since. Thus at Waterloo, in the attack on Planchenoit, the Prussians lost within about two hours twenty-five per cent. of the numbers sent on, and were fighting nearly the whole of that time as individuals.

Meanwhile Napoleon was learning that even France could not stand his expenditure of "30,000 men a month" * without deterioration of quality, but this deterioration of value conditioned not only the tactics but the strategy of these closing years of the war, and has sensibly modified military reasoning ever since, hence it forms a necessary portion of our investigation.

It was the winter campaign of 1806-7 and its terrible hardships from cold, snow and mud (whole battalions are said to have been swallowed up in the latter, and having seen East Prussian mud, I can well believe it), which first broke the spirit of the men, and as news of their terrible sufferings and those of the troops in Spain and Calabria reached the country, the unpopularity of conscription grew enormously. The following figures taken from a special article in the *Militair Wochenblatt* (1887), compiled from statistics and letters relating to the troops furnished by the Rhine Confederation, will give some idea of the wastage. The Westphalian contingent † which crossed the Pyrenees in 1809 were reduced to a single battalion in April, 1810. A Saxon regiment that left Mannheim on the 18th January, 1810, with 52 officers and 1194 men, and which was further reinforced in April by 38 officers and 1229 men, mustered in November of the same year only 16 officers and 7 men fit for duty, and of the original number only 38 officers and 249 men succeeded in regaining Germany. The little

* See his boast to the Austrian Ambassador in Paris, 1805.

† Strength not given in original, but about 7000 men.

duchy of Berg lost 12,000 of its male inhabitants in Spain alone. As regards cruelty, both Calabrians and Spaniards had nothing to learn from the Afghans or even from the Inquisition, they mutilated the wounded and tortured and roasted alive * the prisoners with every refinement of cruelty.

The impression created by these losses and lessons spread rapidly, and the resistance against conscription, which had been increasing steadily, rapidly became desperate.

Where, in 1806, the percentages of absentees had been ten, it rose in 1809 and 1810 to upwards of eighty, and it was precisely in those departments which had hitherto provided the best men for "individual" fighting, as opposed to "mass" fighting, that the result was most serious, for it required considerable self-reliance and strength of character to dare the authorities and expose one's self to all the consequences of being an "out-law." †

As a consequence only the least reliable reached the Army, and the men sent up to the front to reinforce the Army in Vienna were of such a low quality that they had to be massed in heavy columns to induce them to go on at all, hence the awful slaughter at Aspern and Wagram. In the latter battle, McDonald formed the whole Infantry of his corps in one huge column, each line of which consisted of deployed battalions, closed to six paces distance and fourteen battalions deep.

In order to try and beat up these *refractaires*, as the men who refused to come in were called, no less than sixteen flying columns, numbering some 32,000 Infantry and Cavalry, were employed in France alone. The men of these columns were quartered in the villages from whence the *refractaires* had escaped, and were authorised to behave as in an enemy's country. Those they captured were placed in irons, and when a sufficient number had been collected, they were marched off towards the coast in chain gangs, after a certain percentage, chosen by lot, had been publicly shot *pour encourager les autres*. From the coast they were taken by ship to the islands of Oleron, Rhé, Walcheren, and others suitably situated, where they were organised in battalions by specially selected officers, who were ordered literally to coax them into a good humour again, for Napoleon thoroughly understood that the more obstinate the *refractaire* the more likely he was to make a good soldier eventually, if once he could be made contented with his lot.

* See Thiébauld's and Marbot's memoirs for confirmation.

† See a most interesting and historically accurate novel of Robert Buchanan's, 'The Shadow of the Sword,' for full details of what "Outlaw" in those days meant.

From the islands they were taken by ship, when the absence of English cruisers permitted, to Holland, and marched overland, without touching French soil, to their destinations.

Of course it was principally the exceptionally determined recalcitrants who were thus dealt with, for all the islands round the French coast would not have sufficed to accommodate all the deserters. The less obstinate ones were placed in the ordinary dépôts and their spirits broken to discipline by constant drill and hard marching, under which the weaklier ones broke down, and only the hardier remained to march against the enemy, so that in spite of everything, the men who eventually reached the front were in all respects, except as regards training to stand fire, disciplined troops, and not mere recruits in the ordinary acceptation of the word.

It is not easy to form a connected picture of the Evolution of the British Army throughout this period. Whereas, on the Continent, troops were employed under climatic and topographical conditions which were relatively uniform, we, as always, had been fighting all over the world, from Canada to India, and each battalion brought back with it both the good and bad points relatively to Continental methods such service developed.

The essential difference, however, remained that whereas both in France and Germany skirmishing had evolved itself as a make-shift to meet special emergencies with untrained raw material, our Light Infantry practice had been grafted on to thoroughly trained and disciplined troops—a very important point to bear in mind.

But then, as now, regimental custom stood much in the way, and though our Light Division deservedly won the admiration of all Europe, our average line regiments proceeding on active service had generally to learn two-thirds of their business in face of the enemy, and from the first were hampered by the very inferior quality of the recruits.

The following extract from the works of Major-General Mitchell gives on the whole the fairest summary of the state of our Army during the Peninsular War, and is worth contrasting with the views so abundantly put forward of late in our daily Press.

“When, in 1803, after a disastrous waste of blood and treasure, it became apparent, even to the meanest capacity, that an efficient engine of war was absolutely necessary—every exertion was made to metamorphose Englishmen into soldiers—a task which the Whigs assured us was altogether hopeless.

“As pipeclay and drill were in those days looked upon as the best specifics for teaching Britons—the boldest and most athletic men in Europe—how to fight, an officer had then a fair chance of

being promoted, provided he could strut up and down a parade in a commanding manner, give his orders in a loud voice, and above all make a battalion perform, in a cloud of pipeclay and hair powder dust, some of the so-called 'Eighteen Manceuvres.' A good deal of abuse heaped upon all ranks of subordinates was passed over, and became almost fashionable, whilst the foolish pedantry with which a number of high officials watched over the details of dress made an officer almost dependent on his tailor and hatter for the tenure of his commission.

"As to 'military talents,' they were, by universal consent, never spoken of; they were deemed far beyond our grasp and accessible only to our enemies; all military knowledge open to Englishmen was supposed to be confined to the book of the Regulations. If any one ever thought about the higher branches of the science, he carefully kept such thoughts to himself, well knowing that, right or wrong, they would at best have been considered, *de très mauvais ton*; and as to writing on the subject, it was, of course, utterly out of the question. Nor is there a single work or essay on military affairs dating from the commencement of the War that is even worth the paper on which it is printed. The Horse Guards, so favourably distinguished for courtesy in all official transactions, almost forgot their usual politeness if anybody attempted to bring matters of professional science to their notice.

"It is a curious fact that none of the officers of the martinet school distinguished themselves in the field, or acquired any permanent reputation, whilst many were pre-eminently unfortunate. The late Sir Harry Clinton was nearly the only exception; he was a man of the highest military talent, perfectly acquainted indeed with all the details of duty, but likely to be strict only about those which were of real importance. As a general, he commanded the divisions which decided both at Salamanca and Waterloo.

"No one was more free from the martinet mania than the Duke himself; he hardly ever interfered with the drill and exercise of the troops, and in the matters of dress gave the officers pretty nearly *carte blanche*.

"The martinet dynasty was also favourable to the rise of what were termed in the Army 'pen and ink' men—not, as might be supposed, literary characters, but Staff officers, mostly Brigade Majors and A.D.C.'s who could make out a neat return, quote page and chapter of a regulation, and who knew the number of a manœuvre without perhaps knowing its object, could write a neat invitation to dinner and a vapid brigade order after an inspection. Of these only one cut a figure during the War.

"About the same time a good many foreign adventurers—

counts and barons of course—obtained rank amongst us, under pretence of being heirs to the high military wisdom and science deemed by universal accord completely beyond the reach of Englishmen. They brought us 'filthy' moustaches, fur caps and fantastic hussar jackets; and having drawn good pay and pensions, passed away without leaving a single name sufficiently remembered to be laughed at. None of these adventurers belonged to the King's German Legion. The officers of that corps were mostly Hanoverians, men of rank in their own country and generally also of good education; taken as a body these could not be surpassed by any corps of officers whatever.

"It is well known that owing to the exertions of the Whigs, and other opposition parties of the day, the British Army took the field at the commencement of the Peninsular War totally destitute of all confidence except what was derived from the undisputed courage of the individuals of which it was composed. It was weighed down by the belief in some mighty phantom of military science that, at the command of our enemies, was to descend upon us in thunder, and crush our puny efforts. To this phantom, which was always coming, but never came, we thought we could oppose nothing but hard, stubborn fighting, and, the Infantry under this narrow view having been brought once front to front with the enemy, the result was pretty generally trusted to the gallantry of the troops, and never trusted in vain. We do not know that the British Troops ever fought with any advantage on their side beyond what they derived from their own sterling qualities, but they frequently fought at a great disadvantage, and not a single battle from 1808 to 1814 can be mentioned in which, had the parties changed sides, the results would not have been exactly reversed; 1500 French would not have driven 8000 British from the field of Albuera,* and the attempt to escalade Badajos and storm Ciudad Rodrigo would have been laughed to scorn. From this it follows that our success was due far more to the gallantry, good conduct, and high feeling pervading alike all ranks of the Army, than to the skill and exertion of any particular class."

Then follows a long dissertation on the way in which the services of the regimental officers and men were rewarded, very interesting, but too long for quotation; the concluding remarks are however necessary to understand what he has subsequently to say about the way the men fought.

* Mitchell evidently only counts the unwounded men who reached the summit of the "fatal hill," and of course is justified in doing so, for the dead and wounded obviously could not "drive" an enemy, but the assertion is nevertheless a little strained.—F. N. M.

"The minds of all officers were literally fettered, no one was supposed even capable of thinking on military matters ; there was no professional assimilation of feeling ; no amalgamation of sentiment, beyond what honour, patriotism, or private friendship inspired, ever took place. We were kept together by the iron bonds of a stern and rigid discipline, tempered only by the zeal and goodwill that avowedly pervaded all ranks. The injurious consequences of this estrangement extended themselves like a damp chilling mist over the whole profession ; affecting more particularly the Cavalry, who are more dependent on the daring and spirit of enterprise of individuals.

"The men followed their generals mechanically ; some leaders were better liked than others, some cordially hated, but none exercised any commanding influence over the minds of either officers or privates. Colonel Napier, in describing the critical situation of the Army after the battle of Albuera, says that the men had lost all confidence in their leaders. There was plenty of despondency and want of confidence (as to results) in the Army on the eve of the battle of Waterloo ; but it never shook the resolution of the men. On the contrary, it brought on that *stubborn and resolved kind of fierceness*, that, after any desperate and protracted resistance, seizes on the minds of British soldiers and makes them callous to all but the *desire of destroying their enemies*. On ordinary occasions, when soldiers assist their wounded officers or comrades to the rear, they return—when they do return at all—leisurely enough. But at Waterloo many of them refused to quit the ranks, and others actually left wounded officers in the middle of the road and returned to their posts. But all this was totally independent of any opinion entertained of their commanders. They were fierce and anxious to avenge their comrades.

"Whoever had opportunities of seeing British troops engaged, or even beheld such men as the Duke of Wellington, the Marquis of Anglesey, Lords Hill, Hopetoun, Lynedoch, Sir Hussey Vivian, and a host of others under fire, could not fail to be struck with the abundance of that high spirit in the Army which counts life and toil as nothing when weighed against the honour and interest of the country. *Nearly* all these who at any time held responsible command in action looked as if it would have been impossible to make them comprehend the existence of anything like personal danger to themselves ; the minds even of the least composed and tranquil (and some, owing to an intense anxiety about results, were far from tranquil) appeared incapable of descending to such considerations."

Then follows a very long nominal list of regimental officers, and

he then proceeds to back up his favourite principle of the advantages of a good military education, and, probably with a certain amount of personal bias—he was himself a gunner—to speak of the Artillery in the following terms:—

“In this Army list *raisonné* we must pass over the Artillery, for few officers of that arm could be named without praise, which shows what a good military education such as they had all enjoyed can effect. The Artillery formed in fact the most perfect branch of the Peninsular Army, and was of course free from the shackles that *modern* tactics had so successfully imposed on both Cavalry and Infantry. The Engineers were unpopular, undeservedly so, we think, for a corps which reckoned such men as Sir Harry Jones, Fletcher, Burgoyne, and Paisley in its ranks, could not easily be surpassed.

“Next to the Artillery, and far superior to the rest of the Infantry, by their *moral* alone, were the Light Division. They had been trained under Sir John Moore to a better and more efficient system of tactics than any other part of the line ; and as they were generally in advance and nearest the enemy, they contrived to rid themselves more effectually than the rest of the Army of the trammels that the modern science of war (*i.e.* Pedantic imitation of Prussian methods on peace parade grounds) has so carefully imposed upon military talent and energy. This sort of freedom, backed by success, produced in all ranks a degree of pride and confidence which led to the best results, and proved on every occasion how vastly superior British soldiers are in point of professional intelligence to the best of Continental troops. Nothing indeed could exceed the aptitude of the men in this division in whatever related to actual duty, except the buoyant exuberance of spirits they displayed whenever they were released from restraint. In their sayings and doings they approached nearer to the manner of sailors than any other troops in the Army ; proving beyond dispute that to an Englishman war is by far the most congenial pursuit.”

CHAPTER IV.

Summary of arguments in preceding chapters—Increased rapidity of fire due to drill compared with recent increase due to mechanical improvements—Uncertainty of success in battle—Effect of the French Revolution—Jourdan's law of conscription and its tactical consequences—Changes in Prussia after 1815—The hiatus in military thought—Advantages and disadvantages of localisation—Von Wrangel and Steinmetz—Effect of short service—Origin of the modern company column—The rival schools—Captain May and von Schellendorf—Moltke's influence—Comparison of our tactical readiness in 1870 with that of the Germans—Austria and Prussia in 1866—Paid substitutes *versus* universal liability to service—Results of war experience in '48 and '59 misleading—General Dragomirow and British volleys in Spain—Prussians attribute their successes to the breech-loader—The consequences in 1870—The engagement of Woerth.

THE termination of the Napoleonic epoch gives a fitting opportunity to sum up the successive steps of my argument.

From the time of Cromwell we have seen leader after leader endeavouring to solve in a practical manner the problem of how to occupy the greatest possible extent of front with a given number of men without at the same time sacrificing the intensity of his frontal fire.

As with each slight increment in range the space to be crossed by the assaulting force increases, it becomes possible to reduce the number of bullets which can be delivered per yard of front, without impairing its power of resistance, for the assault is longer under fire and the men more blown at the moment of final shock.

At the same time, as drill-training increases the rapidity of fire, a thinner line becomes able to supply the requisite storm of bullets, and the climax in this direction is reached when rapid loading enables the closed line to deliver as many shots a minute as the original method of file-firing. Thus where at the close of the seventeenth century columns at open files, twelve deep, were needed to maintain a constant fire of about six bullets a minute per yard of front, the three-deep line, as drilled and trained by the "old Dessauer," could deliver an equal fire in the same time, with a corresponding increase in the extent of front covered by the same numbers. Superior drill had, in fact, secured as great a relative advance in the number of bullets delivered per minute as the fifty

years of mechanical improvement since Dreyse invented the first needle-gun, and had further intensified the fire-effect, because the thin line suffered far less than the old column, and also because the well-drilled men had their nerves under better control than their less-trained predecessors.

I am sometimes tempted to speculate on what the fire-power of a modern line might become if the same care and attention were again bestowed on "fire-discipline" as was the rule in Frederic the Great's Army. With them it was "fire-discipline" every day and all day long, and how thoroughly it was practised any one can judge for himself who will take up an old musket and try to load it in ten seconds; yet seven rounds a minute (*i.e.* slightly more) was the standard of individual fire the old King insisted on and obtained.*

As between European Armies, a state of tactical equilibrium had been everywhere attained; practically speaking, if both sides played the tactical game according to rules, they could only mutually destroy one another, and the result of great battles became so uncertain, the balance of advantage to the victor so slight, and the cost in trained men so excessive, that only the greatest of leaders would risk one, and then only in reliance on his strategical skill in combining greater numbers on the decisive point.

The whole of this system was then overthrown, not by a new weapon, but by a sudden constitutional change in a single State—the French Revolution—which, by the intensity of internal suffering it evolved, practically drove the whole manhood of the nation under arms, and supplied the French generals with an unlimited amount of raw material, which could be expended without responsibility to Kings or Cabinets.

Ultimately the supply of raw material was regulated by Jourdan's law of conscription, and it was the power this law placed in Napoleon's hands which led to the overthrow of all existing Continental organisations, and compelled all countries in turn, except England, to submit, at longer or shorter intervals, to universal service, which at the time, and under the conditions of its introduction in face of a victorious enemy, in itself prohibited the retention of the old system of Line tactics.

This is the essential point on which all recent tactical evolution turns, and it is precisely because its full significance has been hidden under so many conflicting factors that tactical instruction has everywhere remained in such a chaotic state—the French,

* See Nos. 27 and 28, *Kriegsgeschichtliche Einzelschriften*; also Sir John Moore's Diary, where, in one of his letters to his father, written from Hanover, at the age of seventeen, he mentions that he has now learnt to load and fire his musket at this rate.

44. THE EVOLUTION OF INFANTRY TACTICS.

assuming always that their system of skirmishers and small columns is fundamentally right because it beat the Frederician Line at Jena, and ignoring that it failed against the British Line consistently throughout the Peninsula and at Waterloo ; the Germans assuming it right because, though they failed with the Line at Jena, they were successful with small columns in 1814 and 1815, closing their eyes to the fact that no other system was possible for them at that period ; and the British believing (which is not strictly the case) that the Germans beat the French in 1870 by the use of skirmishers and small columns, and, wanting in the habit of scientific inquiry which insists on going down to the fundamental cause of a given phenomenon, have hastily assumed, to save themselves the trouble of hard thinking, that there is some mystic property in the bullet propelled by a breech-loader, which renders the maintenance of their time-honoured Line formation an impossibility, and if impossible against the breech-loader, how much more, therefore, against the magazine rifle. All alike combining to overlook the prime cause which conditioned the whole matter, viz. the change in the nature of the raw material available.

I have dealt at length in my 'Cavalry : its Past and Future' on the moral and physical collapse which followed the crisis of 1815 in Prussia ; here it will only be necessary to refer specially to the effect of this collapse upon the Infantry.

The bulk of the survivors of the Great Wars were those who joined the Army after 1812. They came to it with an inherited prejudice against everything connected with the old *régime* ; and because the patriotic spirit evoked by French oppression and cruelty gave them willing recruits to work upon, and these raw soldiers fought with enthusiasm and devotion, they rather jumped at the conclusion that this patriotic enthusiasm would always suffice when untrammelled by a rigid drill-ground training.

A happy, contented life in barracks, and just enough drill to satisfy the inspecting generals, formed the summit of their aspirations, and for some thirty years, till the old generation of officers had almost completely passed away, the Prussian Infantry went steadily backward, and military study was almost as much neglected as with us, and this in spite of the writings and works of Clausewitz, and his labours at the Kriegs Akademie (*i.e.* Staff College). Thus there arose a great hiatus in the continuity of military thought, which must be realised to appreciate the true value of the modern military literature of Germany, on which, for the last thirty years, we have based our theories.

Promotion was incredibly slow ; very few men got their companies under twenty years' service, and twenty-five was by no

means an unusual occurrence, and if the high average of age proved detrimental in the Cavalry (as I have already pointed out), it can be imagined how it interfered with the practice of Light Infantry movements at the "double." On the other hand, the great age of the officers had its advantages, for the regiment, being strictly localised, a strong sense of attachment grew up in its district towards it, and grandfathers were proud to have their grandchildren serving under the same officer, who, as a subaltern, had led them against the French; and the exact knowledge of their men's character, which became, through this cause, traditional in the Prussian Army, made possible the maintenance of the strictest discipline without recourse to punishment. This discipline was maintained until in many districts the growth of the large towns swamped the agricultural element; but this did not occur until after the 1870 campaign, and in some regions it has not happened yet.*

I have used the word "discipline" in its modern conventional sense, as synonymous with good behaviour in camp and quarters—a very different meaning to that of its strict technical significance, viz. that quality in the troops which enables them to stand up to heavy punishment—as it enables me to bring out more clearly what afterwards happened.

The few first-rate and vigorous veterans who remained, such as von Wrangel and Steinmetz, both of whom knew what hard fighting meant, being powerless to make the fat old captains and field officers double about the ground, contented themselves by enforcing such precision and rigidity of movement as they could get, and doubtless, too, like many other war-experienced soldiers, considered that men learnt to take cover soon enough when bullets were flying, without any preliminary practice. Moreover, they could not fail to be biased by the fact that ultimately the Napoleonic battles had been won by closed columns, which often never fired a shot, and not being able to foresee the advent of the long-range

* Lest I should be accused of exaggeration, let me show in detail what occurred in many instances. Take married men of forty years of age serving under a subaltern of twenty in 1815; their sons would probably join the regiment in 1817, leaving the colours and marrying in 1820; in 1841 their grandsons would come up, and the great-grandsons in 1865. I remember well, in 1872, finding an old man in a state of collapse by the roadside, close to Gravelotte, and whilst I was trying to help him, his grandson, a man of about thirty, who had run to fetch assistance, returned. The latter had fought as a reservist in the battle, and his old grandfather, then over ninety, had insisted on keeping the anniversary of Bautzen, where he had first smelt powder, by going over the ground where the younger one had fought in the ranks of the same regiment.

I stayed and talked with them some little time, and the old soldier told me with pride of all the officers he had seen come and go. The incident may seem trivial, but it will help those who look for the cause of things to understand what a hold the Prussian Army system acquires over those who have passed through it.

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rifle which was to paralyse the preparatory action of the Artillery with its devastating case-shot, they were satisfied if they could preserve the forward impulse of the mass, trusting that matters would right themselves on the battlefield, as they had so often done before.

But meanwhile the system of short service had been evolving an entirely new race of subalterns as it inevitably does in all Armies, by compelling the young officer to become both the instructor and leader of his men. These men chafed at the little liberty the old system allowed them, and it was through these that von Wrangel endeavoured to act, by re-introducing the idea of the company column. This he attempted to revive as early as 1848, but so mighty is the power of old age and tradition, that it had hardly become part of the established system in 1870, though after Wrangel, Prince Frederic Charles, as Commander of the IIIrd Army Corps, lent it all the weight of his authority and position.*

From about 1860 onwards there were thus two opposing schools at work, the school of the captains, championed by Wrangel and the Red Prince, and the school of the closed battalion column, represented by all that was old and venerable, and with just so much right on its side that it was impossible to convince it of error.

Captain May, in his 'Tactical Retrospect' and 'The Prussian Infantry in 1869,' may be taken as the extreme exponent of the former, but his standpoint is so narrow and his military reading so defective that he did more harm to his cause than good, for Bronsart von Schellendorff, in his reply, had very little difficulty in destroying his arguments by showing that battles are decided by the combined action of masses, not by the independent efforts of company leaders—a point which is too often overlooked; but, curiously, it happened that, in the sense that Clausewitz intended, the battles, both of 1866 and 1870, were decided without a final appeal to the "masses," and practically it appeared that May had the best of it.

Reading these controversies now—important only because we still suffer from their influence—it appears astonishing that the standard of military knowledge could have sunk so low in the Prussian General Staff; for if May did not realise how Napoleon planned his battles, von Schellendorff was equally ignorant of the Frederician method, and certainly knew nothing of our British system. Indeed, it is only since the examination of the Berlin

* See Prince Frederic Charles' pamphlet, "How to fight the French," and his numerous circulars issued as G.O.C. III. A. Corps. Read also Malachowski's "Scharfe u. Revue Taktik."

archives began that the idea that battles had been, or could be, won by methods other than Napoleonic appears to have dawned upon them. That our Army, fighting constantly in every climate under the sun, and against every variety of enemy, should not have time to study Continental history, and should find a difficulty in arriving at a general solution of all our problems, need not excite astonishment, but it shakes one's faith in German thoroughness and scientific accuracy to find from a comparison of their own productions how much they had neglected the study of military history.

Moltke's influence in this tactical field seems to have been very trifling. Strictly it lay outside his sphere altogether, his time and energy being all required for mobilisation and the training of the General Staff; he initiated neither the reform of the Cavalry nor that of the Artillery, and generally seems never clearly to have faced the question what must happen when both sides possess an armament of equal power.

In 1865, when he wrote his 'Observations on the Effect of Recent Improvements in Small Arms,' the essential problem of the moment lay in the increase in the range and accuracy of small arms which had suddenly prohibited the case-shot artillery preparation, and thereby conferred an enormous advantage to the defensive, as the Civil War in America showed. But to this, to the best of my recollection, he never alludes, and in his writings subsequent to 1870, when he went over almost entirely to the defence school, he never seems to perceive that the heavy losses of the campaign, to which he so pathetically refers, were due to the fact that no efficient substitute for the old case-shot preparation had been supplied, and that the task set the German Infantry of closing in from 2000 yards to 500 without the power of firing an effective shot in reply to the storm of bullets with which they were often almost overwhelmed, was one exceeding in severity any that had ever previously been set to any European Infantry; yet at the time he wrote this, the development of shrapnel fire had supplied an effective equivalent for the old case-shot, and there was no longer any human possibility of the German Infantry being outranged as in 1870.

We are so accustomed nowadays to unfavourable comparisons being drawn between our state of preparation for war and the readiness of our neighbours, that it may be of interest to consider how we should have stood the test had a British corps of all arms and equal strength taken the place of the Prussian Guard at St. Privat.

Our Armstrong field-gun had a higher initial velocity than the

Krupp, and equal accuracy, but we carried both shrapnel and segment, which would have given us five-fold man-killing power at least ; we were better horsed, and our drivers far more highly trained ; and it would have been the worst of bad luck, seeing how we were taught, if the commands had devolved only on the few faddists who failed to appreciate the advantages of massing their batteries. The Cavalry we may leave out of account, though, under a capable commander, they might have found one chance to charge Infantry, and for that they were good enough. The Infantry carried the Snider, an incomparably superior weapon to the needle-gun, which could have replied to the chassepot at 1000 yards with far greater effect than the Prussians could do at 500 ; and as for our tactics, even if we had made no advance on the formation at the Alma—of which Moltke wrote so slightly—even that would have saved us from coming under the chassepot rifles in rendezvous formation, for we should have been with our light troops extended in front, and two deployed lines, some 300 yards apart, following in rear, and our old long-service battalions, who, like Frederic's men, "knew nothing about taking cover,"* would have followed their officers no less gallantly than at the Alma or the Redan. I take it the course of the action would have been somewhat as follows, assuming that, like the Prussians, the Infantry had been compelled by force of circumstances to a premature advance.

Our gunners, with their far greater destructive power, would in the same time have shaken the enemy's aim to a considerably greater degree. The Light Division, extended in true skirmishing order, at twelve paces between the files, would have worked their way, at any rate, to the limit the Prussians attained, viz. 500 yards, at which distance their fire would have been very effective ; and the Infantry attack, avoiding by our habitual early deployment (for which we were so abundantly sneered at by all Continental critics) the trap into which the Prussians fell, could not by any possibility have suffered heavier loss than overtook those few battalions of the Guard, who actually did advance in line, suffering less loss than their comrades in skirmishers and small columns, and only halting at length because their isolated advance could of itself avail nothing.

Compare the two cases fairly, and remembering what our old long-service battalions were when it came to hard fighting, and say whether we were quite so behind our Continental friends as our critics of the day would have had us believe.

I confess that for some years I shared their belief, accepting their facts as unquestionable, but when by degrees I learnt from German officers the true inwardness of their own tactical progress,

* Quotation from Meckel's 'Midsummer's Night Dream.'

and the difficulties and obstruction by which it was beset, I came to the conclusion which I now submit, viz. that our best and worthiest traditions have been blindly sacrificed to hasty generalisations on imperfect information.

To revert, however, to the actual condition of the opposing forces when war between the Austrians and Prussians was actually declared. Fifty years of short service and the strict localisation of all units had evolved in the Prussian Army a power of accepting responsibility in all ranks, which, however much it may have fallen short of the ideal, at any rate was greatly superior to anything that had ever been known before. Popular education had also developed a degree of intelligence throughout the rank and file of the nation which had reacted on the commissioned ranks of the Army, and thus afforded to Moltke a supply of intelligent men from which to select his Staffs; and if the men were by no means enthusiastic for their cause, they possessed an unbounded confidence in their weapons, which grew stronger as the campaign proceeded.

The Austrians, on the other hand, were always lacking in cohesion; their Italian-raised regiments could hardly be trusted; their Croats—and many of their Hungarians—were intellectually far beneath the Prussians; and their law of conscription, whilst giving longer service with the colours, sanctioned the system of paid substitutes, a combination which in every way lightened the responsibility of the company leaders, and rendered the centralisation of power very much easier.

Relatively to the Prussians, the Austrian Army had had far more war experience; but war experience, unless carefully handled, may prove the most dangerous of all pitfalls.

In 1848 the Infantry had been disappointed with their new percussion-muskets; they found that percussion-caps were awkward things for trembling fingers to pick out of a pouch and adjust on the nipple, and in 1859 their confidence in their new rifle had been most seriously shaken. Their books and instructions had told them that nothing could live in front of these accurate weapons (our own said the same, by the way), and when they found that, in spite of their long-range volleys, the French still came on, they became flurried, forgot to put down their sights, and thus threw away their last chance of stopping the rush.

Then occurred the usual reaction; the Infantry jeered at all new-fangled inventions, including the needle-gun, revived Suvaroff's old sayings, and went over bodily to the cult of the bayonet.

Still, the cause of their defeat is not accounted for, because

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they possessed an admirable Artillery,* and, as events proved in Italy, an excellent Cavalry,† and had the three arms combined their powers all might yet have gone well; but the fatal defects in their system of Staff selection and training led to a paralysis of their mounted men, and an entire failure to ensure that timely co-operation of the three arms which can alone guarantee great results.

Even without the breech-loader the Prussians must have defeated them, for against ideal targets it never scored such an appalling percentage of hits as the muzzle-loader had often done. As the well-known Russian authority, General Dragomirow, who accompanied Steinmetz as military attaché, remarked in discussing the question of losses, "All the world wonders at the efficiency of the new Prussian weapon, but it occurs to but few to notice the coolness, intelligence, self-denial, and sense of duty of the men who held these weapons. Are these factors really only secondary? Are they not, perhaps, the decisive ones? In war that side will be defeated which was already beaten in peace. In war mutual confidence between men and men, the bedrock of discipline, cannot exist when in the individual the feeling of duty has not been developed, or perhaps the soil from which it springs does not exist. Each man must at least be sufficiently carried away by the cause for which he is fighting, which may for the moment be only the credit of the body of troops to which he belongs, to die for it cheerfully. In a way the truth of this is universally admitted; we are never tired of repeating 'in war *moral* counts for three-quarters, etc.,' but when we come to investigate a particular point this is forgotten, and one endeavours to deduce the result from the weapons, the hair-powder, or the length of the pig-tails. The effect of the Prussian fire was not in itself particularly remarkable, and if as a fact it did spread universal consternation, the reason is only because people forget too easily former experiences. To whom is the terrible effect of British volleys in Spain unknown? In those days the armament on both sides was equal, but there were other points of difference, viz. national skill in the use of arms, coolness, and steadiness."

This point of view, however, was completely overlooked in the Prussian Army itself, except, perhaps, in the highest circles, probably on the principle expressed in the Persian proverb, "It is always darkest under the lamp," for of blunders, friction, and

* Muzzle-loaders with time fuses and shrapnel. Of the Prussian Artillery, one-third had still the old smooth bore, the remainder 9- and 12-pounder B.-L. Krupps, but firing common shell only with an initial velocity of about 1020 f.s.

† Custozza. See 'Cavalry: its Past and Future.'

over-fussiness there had been enough and to spare, and the troops who had suffered under them overlooked the fact that there had been more on the other side; mainly also because of the very high reputation the war-seasoned, long-service Austrian troops had enjoyed throughout Germany, which led to the feeling that they could not have beaten such veterans on equal terms, and as the only obvious inequality lay in the nature of the Infantry armaments, the result was universally attributed to the weapon, not to the man who held it, and the jubilation was great.

Presently, however, when it became obvious that in any future war the advantage of armament was likely to be on the other side, and that to a degree far greater than had been the case in Bohemia, an uneasy feeling began to permeate all ranks that the breech-loader's fire would be a very awkward thing to face, and discussion as to how the losses of the next campaign were to be avoided became the fashion almost as much as they are in England at the present moment. No conclusion was come to, and in the nature of things none was conceivable until the equality of armament was again re-established; but the war burst upon them long ere this was accomplished, and the Army took the field with only this one guiding thought, viz. since the *chassepôt* ranged 2000 yards, and the needle-gun was only sighted to 600, the Infantry must press in at all hazards to such a distance as would enable them to reply to it. To this tendency add the distrust of Artillery power, due to its relative failure to satisfy expectations in Bohemia, and the habits of the manœuvre-ground, and the cause of all subsequent tactical disappointments is obvious.

There were, however, yet others which, now that our former "comrades"—as thirty years ago it was the custom in Germany to call us—are rejoicing in our troubles, it may be as well to recall, merely to remind them that accidents will happen, even in the best-regulated households, a point they seem recently to have forgotten.

I could fill reams with anecdotes of Staff blunders, of imperfect reconnaissance, and half-hearted execution of orders which would confirm the revelations of the 'Midsummer's Night Dream,' of Hoenig's 'Twenty-four Hours of Moltke's Strategy,' and other less known pamphlets and disclosures, but a *résumé* of a single action, that of Woerth, will abundantly serve my purpose.

It is well known that no battle had been designed by the Head-quarter Staff of the IIIrd Army for the 6th August at all, the whole day being required, it was considered, for the Army to

close up, its corps being still widely scattered both in breadth and depth.

The French, however, on the evening of the 5th, lay already in position along the right bank of the Sauer, and opposite, a weak advance guard of all arms of the Vth Corps faced them on the ridge east of Woerth. The 1st Bavarians lay on their right rear, almost within striking distance of the French left, the XIth Corps forming the Prussian left away to the eastward between Gunstett and Sulz, where the Crown Prince had his head-quarters. The IVth Cavalry Division had done some scouting during the day, but, as Albrecht said of our Cavalry in South Africa, "they had gone home to tea," and the Infantry were left to their own resources.

About daybreak the Prussian outposts reported movements in the French lines which were considered to point to a retreat. To settle the matter, the outpost commander brought up his Artillery, and a few shots soon drew a reply of overwhelming vigour, so the action was broken off. Unfortunately, the outpost commander was in ignorance of the fact that the 1st Bavarians on his right had orders if any guns were heard, to attack forthwith, and hardly had he withdrawn his guns when he became aware that a brisk action had broken out in the woods towards Langen-Sulzbach, where the French left rested, and that the Bavarians were being beaten back. This was a few minutes before nine, and General von Kirchbach, commanding the Vth Corps, had appeared on the scene. In view of the political relations between the two nations, Bavarians and Prussians, it seemed impossible to leave the Bavarians to their fate, so he threw his orders to the winds, and re-opened the fighting. As a preliminary a big battery, 108 guns, was formed, which soon overpowered the French Artillery, and the fire was then turned upon their Infantry, but apparently up and down the line without definite concentration on any particular point. Then followed the Infantry advance, made by four and a quarter battalions in all against the centre of the French position, and even this not as a combined movement, but in three separate groups, viz. 5 companies on the right, 4 in the centre, and 2 battalions (8 companies) away to the left, or, say, 4000 men on a front of a mile and a half against an Army entrenched in position with nearly 12,000 men to the mile and an immeasurably superior Infantry weapon in their hands. The French trenches were held by troops in line, and being disposed in tiers, and following the contour of the hills, they were able to bring a convergent fire on each of these groups, which, after a most plucky attempt, were beaten off with a total loss for the day of 57 officers, 1567 men.

killed and wounded, roughly 40 per cent., against our 50 officers and 719 men at the "disaster" of Colenso ; yet Kirchbach was not held up to public reprobation as an incompetent butcher.

Meanwhile the firing had been heard at head-quarters, and an officer had been despatched to Kirchbach a few minutes after nine with positive orders from the Crown Prince to break off the action. *This order never reached him ; it was taken by mistake to the Bavarians instead, who immediately proceeded to obey it.* In all military history I believe this to be the most unaccountable blunder. The two corps were marked by distinctive uniforms, which should have prevented its going astray, but even if it did, how can we account for its being obeyed by the corps for which it was not intended ? Surely this points to a degree of carelessness on the part of the Staff which we would find some difficulty in matching. Perhaps it was sent verbally ; but what excuse can be offered for a verbal message when, as Sir William H. Russell told me, the Staff were sitting quietly at breakfast at the time it was issued ?

As a consequence of this order the Bavarians actually had broken off the action, and were retiring, not in the best order, pursued by the French. Simultaneously, too, Von Kirchbach learnt that some advanced troops of the XIth Corps had also been forced back across the Sauer. The situation was most critical ; he could not desert his allies on his right, and to withdraw his own troops would be a practical acknowledgment of defeat. So he there and then decided to renew the attack, and called on all corps commanders within reach to co-operate with him, sending back word to head-quarters of what he had done.

The subsequent course of the battle need not detain us ; as every body of troops arrived on the field they were hurriedly thrown forward, and as the overpowering fire of the big Prussian batteries began to tell, the French fire lost accuracy, and step by step they fell back before the growing pressure on front and on their flanks.

The French had in action only 31,000 Infantry, the Germans brought under fire 71,000, exclusive of Cavalry and Artillery, and of these no less than 9000 were put out of action by rifle-bullets, and it has been calculated that the French expenditure of ammunition did not exceed 200 rounds per German disabled. In the repulse of the 38th Brigade (Von Wedell) at Mars-la-Tour by the IVth (L'Admirault's) Corps, reputed the staunchest of all the Rhine Army, the most careful computation gives 760 French bullets for one German out of action, though all conditions were far more favourable to good shooting on this occasion, yet the

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weapon was the same. I leave my readers to excogitate the true explanation of this extraordinary discrepancy.

NOTE.—This chapter was written before the appearance of either General Bonnal's masterly work, entitled 'Froeschweiler,' or Major Kunz's excellent detailed study of the same action. As a summary it may stand, but all who are interested in tactical matters should lose no time in studying the above-mentioned works. "After a great victory, truth lies at the bottom of a deep well and it takes twenty years to get her out," the Duke of Wellington is reported to have said. In this instance it has taken thirty.

CHAPTER V.

The engagement of Spicheren—Precipitated by Steinmetz's action—The fight for the Rotherberg—The influence of sound on tactical leading—Tyndall's experiments—Conclusions—Numbers actually engaged and losses—Engagement of Borny—Losses and numbers engaged—Engagement of Vionville—Mars-la-Tour—Formation employed—The Cavalry charges—Effect of the weather—The advance of the 38th Brigade—The chaplain—Situation when order to advance was given—The colonel's comment—Von Schwarzkoppen's only orders—Early intermixture of units—Hoenig's criticism of the Prussian General Staff History—Charge of the 1st Guard Dragoons—The retirement—Exhaustion of the men—Comments—Application of British Peninsular tactics to the same case—or South African ones—Duration of combat and expenditure of ammunition.

The Action at Spicheren, 6th August, 1870.

LIKE the action at Woerth, the encounter at Spicheren was brought on against the wishes of Army Head-quarters. It had been intended to devote the day to moving the troops of the 1st Army, which had been drawn out of their proper line of advance by the French movements on the 2nd August, by a flank march into their proper position, thus clearing the way for the IIInd Army whose leading corps would this day come up into line. But Steinmetz (commanding the 1st Army) either considered a flank march too dangerous, or thinking he could clear the way for the IIInd just as well by keeping ahead of it, moved his Divisions off to the front,* and thus it happened that the 13th, marching by way of Saarbrück, debouched from that town early in the morning just as the French were preparing, or appeared to be preparing, to quit their position on the Spicheren heights.

The Advance Guard commander, in ignorance of the Head-quarter instructions to Steinmetz, considered such an opportunity too good to be lost, ordered up his guns, and the fight began.

For the details of the fight I would refer the reader to General Bonnal's admirable book entitled 'Le manœuvre de St. Privat,' and to many remarks upon the engagement which occur in Prince Hohenlohe's 'Letters on Artillery.' The only points I wish to

* For the discussion of this incident see the new French official history, and on the other side, von Verdy and Cardinal von Widdern.

note are: the exceptional dispersion of the troops that soon set in; the want of proper co-operation between the three Arms; the change of command, which occurred three times; and the signs of want of a single directing will, even of the cool deliberation, which one might expect from an undeniably highly (peace) trained Staff.

For the general aspect of the field in rear of the front, I refer the reader to the following quotation from Colonel Meckel's 'Midsummer Night's Dream.'

"I recalled my first battle in France. We did not arrive on the field till late in the day, and crossed it where the fight had been fiercest. I was already used to the sight of the dead and wounded, but not prepared for what now met my eyes.

"The field was literally strewn with men who had left the ranks, and were doing *nothing*. Whole battalions could have been formed from them. From our position we could count hundreds. Some were lying down, their rifles pointing to the front, as if they were still in the fighting line and were expecting the enemy to attack every moment. These had evidently remained behind, lying down, when the more courageous had advanced. Others had squatted like hares in the furrows; wherever a bush or ditch gave shelter, there were men to be seen, who in some cases had made themselves very comfortable. All these men gazed at us without showing the least interest. The fact that we belonged to another Army Corps seemed to be a sufficient excuse for treating us with blank indifference. I heard them say, 'These fellows, like the others, are going to let themselves be shot.'

"The men nearest me bore on their shoulder-straps the number of a famous regiment. I turned to look at my own men. They began to seem uneasy. Some were pale—I myself was conscious of the depressing effect produced on me by what I saw. If the fire of the breechloader we were now to face for the first time, while already its continuous roll sounded in our ears, had so disorganised this crack regiment, what would happen to us?

"I presently met an officer of the Reserve. I invited him to join my company. He followed without a word. To my annoyance my company had to make a short halt to allow the remainder of the battalion to close up. We therefore rallied the stragglers about us and formed a strong party of them under the command of this officer. Two men only, a lance-corporal and a private, came of their own accord, and asked to join us; all the others were very half-hearted and had to be brought in. Those who could do so sneaked away. The only effect of collecting these stragglers was to produce a bad impression on my men, for as soon as we came

under fire and extended, the Reserve appeared for good and all—only the two of us remained to the end.

"During our advance, before we came and whilst only the whistle of an occasional bullet under any serious fire, we saw six men, one behind the other cowering at I became accustomed afterwards, I saw this sight so frequently to it—who did not! But at the time it was new to me." And a little further on, he describes how he was compelled to extend his men against his own judgment.

"At this critical moment, a senior officer galloped up and shouted at me, 'Captain, extend your men or they will all be killed!' There was no need for me to repeat the order, for in a moment the company had scattered in every direction than that of the enemy. I saw no more of them for the rest of the day, but they turned up all safe at the bivouac fire in the evening. We had lost about 70 men out of 250 in the attack, and the senior officer had not interposed, the further advance would no doubt have been very costly. But if we had driven in the enemy, as I am sure we should have done, we could have repaid our losses with interest. As it was we had escaped the loss of more men, but we had sacrificed the best chance of success."

The actual work in the fighting line was fierce and determined enough, because only the resolute, brave men ever got there—to them all honour, for they had to withstand again and again the desperate counter-attacks of the French, who came out of their shelter trenches at them in line, and had no time to stagger; hence locally the Germans were almost invariably outnumbered on the ground, but because so many of these were not in the line, they were not because there were not men of their own enough to fight.

The arrival of ten guns on the Rotherberg saved them in full view of the enemy's trenches and engaged in a fair stand-up fight. These coming up in succession unlimbered, and they did not one with a whole French battalion of the 66th Regiment, when they did them under fire at a range of 600 yards, and only using the service as shell, drove the enemy out of them.* Such an incident is, I believe, unique in history—theoretically under such a fire as gun ought ever to have succeeded in unlimbering; but succeed, and the question arises whether, had the trench manned by half the number with magazine rifles firing fast, the result would have been different. I hardly think so.

Ultimately the advance of the heads of the 14th Division.
 * See the late Colonel Henderson's 'Battle of Spicheren,' but neither French official nor General Bonnal's work can be said to confirm this statement.

against the French, about 8 P.M., compelled their withdrawal and one of the French Division may fairly ask, what had that been doing all day, and how is their delay to be accounted for? The explanation can only be found in the pages of the late Professor Tyndall's reports on sound signals for lighthouses—important a bearing on the reliability of sound as a point has so important that I propose to treat it at length. guide to marching the Columns that I came across an abstract of these reports.

It was in 1873 the Trinity House made steam yacht, off the North Foreland, communicated to the signals bearing that I propose to treat it at length. had been in a Trinity House made steam yacht, off the North Foreland, listening to sound signals. The made steam yacht, off the North Foreland, near the lighthouse. The made steam yacht, off the North Foreland, occasional passing clouds; at day by a gun and steam syren placed, were distinctly audible, and a distance of six miles both sun and their source. Presently the shadow of a cloud fell on the water between them, and immediately both sounds ceased, though puffs of smoke showed that the signals were being continued. Every body was puzzled to account for this, including the Professor; then the shadow passed away, and the sound recommenced.

It was some time before he hit on an explanation. In the shadow of the cloud the temperature fell very considerably, as a consequence less vapour was generated over the surface, as a water, and hence a break in the continuity of the medium for the transmission of sound resulted. Though the air was optically clear, acoustically it was as if a screen had suddenly intervened against which the sound rebounded, and from this, and further experiments, he deduced the law that not only a cloud, but any break in the continuity of the ground, which gives rise to a different rate of evaporation above its surface, might thus create an invisible screen between two places through which sound could only penetrate with difficulty, if at all.

On reading this, the case of Saarbrück immediately came into my head, and I found the explanation I had been long seeking. In the morning of that day, before the sun had gained strength, firing was distinctly audible to reinforcements on both the French and German sides; the air was still uniform in its aqueous tension, but as the heat of the day drew on, the open fields gave off less vapour than the forests, and the 14th Division were deep in the heart of one, when, about 1 P.M., the firing seemed to them suddenly to cease, and the men, having already made a long march at an enhanced rate of speed, were halted and formed up in the wood to cook their dinners and rest till the evening. Actually at this time the firing outside was increasing, and raged

all the afternoon, but it was not till six o'clock, when the sun's strength was waning, that a sound penetrated to disturb their repose, and almost at the same time a galloper, who had been searching for the missing troops everywhere, appeared, and the march was at once resumed, but the troops only reached the battle-field as twilight was falling, in time to determine the French retreat, but not to recall to life the hundreds who had fallen during the hours of their absence.

The French reinforcing Division was even more unfortunate; they too had been deceived by the sudden apparent cessation of firing, but instead of bivouacking where they stood, they marched back to their camps, which they had left standing, and only reached them just as the sound of the firing began again, when they counter-marched, reaching the vicinity of the battle-field late at night when all hope of retrieving the situation was over.

Since reading that paper of Tyndall's I have made observations whenever I have had an opportunity, and have found his conclusions invariably confirmed, and I would most earnestly recommend that in all Staff handbooks, and so forth, the warning should be inserted that, when once set in motion towards the sound of the guns, troops should never be halted until ocular proof of the cessation of firing has been received—over and over again in military history I find instances of most serious consequences resulting from ignorance of this law, and in these days of smokeless powder the necessity for its observation is even more strongly indicated.*

The numbers of troops actually brought under fire were very nearly equal on both sides. The French had 23,800 Infantry, 260 Cavalry, and 90 guns, against the Germans' 26,000 Infantry, 800 Cavalry, and 78 guns. Out of which the former lost 1980 killed and wounded, with 2100 prisoners; the latter, 4500 with 370 prisoners.† If we could eliminate with any accuracy the number uselessly sacrificed by over-haste, change of command, and by the prolongation of the fight due to the absence of the 14th Division, the true cost of this frontal attack would not work out very high, though the configuration of the ground gave the chassépôt even more than its usual advantage over the needle-gun, for the former could rain lead on to the exposed Germans in the plain, whereas the latter could only reply when they reached the top of the plateau, necessarily too blown and exhausted for straight shooting. It is also worth noting that the manœuvre rule of a four to one superiority in numbers, for a frontal attack, was not adhered to

* It seems that Napoleon almost invariably took the cessation of Artillery fire as a sign that his troops engaged had been successful.

† From *Kriegsgeschichtlichen Einzelheiten*, No. 16.

against the extreme left of the French, about 8 P.M., compelled their withdrawal, and one may fairly ask, what had that Division been doing all the day, and how is their delay to be accounted for?

The explanation can only be found in the pages of the late Professor Tyndall's reports on experiments on sound signals for lighthouses—in the Prussian official one may search in vain. The point has so important a bearing on the reliability of sound as a guide to marching columns that I propose to treat it at length.

It was in 1873 that I came across an abstract of these reports communicated to the *Contemporary Review* by the Professor. He had been in a Trinity House steam yacht, off the North Foreland, listening to sound signals made by a gun and steam syren placed near the lighthouse. The day was bright, with a hot sun and occasional passing clouds; at a distance of six miles both sounds were distinctly audible, and the vessel was steaming in towards their source. Presently the shadow of a cloud fell on the water between them, and immediately both sounds ceased, though puffs of smoke showed that the signals were being continued. Everybody was puzzled to account for this, including the Professor; then the shadow passed away, and the sound recommenced.

It was some time before he hit on an explanation. In the shadow of the cloud the temperature fell very considerably, as a consequence less vapour was generated over the surface of the water, and hence a break in the continuity of the medium for the transmission of sound resulted. Though the air was optically clear, acoustically it was as if a screen had suddenly intervened against which the sound rebounded, and from this, and further experiments, he deduced the law that not only a cloud, but any break in the continuity of the ground, which gives rise to a different rate of evaporation above its surface, might thus create an invisible screen between two places through which sound could only penetrate with difficulty, if at all.

On reading this, the case of Saarbrück immediately came into my head, and I found the explanation I had been long seeking.

In the morning of that day, before the sun had gained strength, firing was distinctly audible to reinforcements on both the French and German sides; the air was still uniform in its aqueous tension, but as the heat of the day drew on, the open fields gave off less vapour than the forests, and the 14th Division were deep in the heart of one, when, about 1 P.M., the firing seemed to them suddenly to cease, and the men, having already made a long march at an enhanced rate of speed, were halted and formed up in the wood to cook their dinners and rest till the evening. Actually at this time the firing outside was increasing, and raged

all the afternoon, but it was not till six o'clock, when the sun's strength was waning, that a sound penetrated to disturb their repose, and almost at the same time a galloper, who had been searching for the missing troops everywhere, appeared, and the march was at once resumed, but the troops only reached the battle-field as twilight was falling, in time to determine the French retreat, but not to recall to life the hundreds who had fallen during the hours of their absence.

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—although again the circumstances of the ground prevented a proper Artillery preparation. I would also suggest that, if the troops themselves had come from the more mountainous parts of the country and not from the plains, had they been in hard training as at the close of the autumn manœuvres, instead of made up with Reservists, and all still getting over the effects of the well-meant but mistaken kindness of the crowds who had given them a hearty send-off, the duration of exposure to fire would have been materially less, and their shooting very considerably straighter.

*The Combat of Borny, 14th August, 1870.**

This is another case of an engagement brought on by the impetuosity of an Advance Guard commander, and exhibits all the characteristics of want of unity of design common to such incidents, and a corresponding degree of unnecessary slaughter.

It is, however, noteworthy for the fact, that though the Germans everywhere attacked without due Artillery preparation, and the combat was only stayed by the failure of daylight; but for the forts behind the French, victory was assured to the Germans when the fighting ceased, though they had brought into action but 30,000 men and 150 guns against the French 50,700 and 200 guns.†

The German losses were but 4910 men, though they fought with the sun in their eyes, which robbed their Artillery of fully two-thirds of its value and made things easier for their enemy in about the same proportion. It is also noticeable that the formation of the ground, a plateau sloping westward, split up by long gullies trending down towards the French position (which, by the way, was artificially strengthened to a considerable degree), added much to the difficulty of the German leading, for the men naturally gravitated into the hollows, and thus the fight split up into numerous independent groups without intercommunication. Eliminate the unnecessary losses due to the above causes and the long-range chassepôt has little to show for its five hours' action. It is worth pointing out, too, that smokeless powder would have had next to no influence on the struggle, for the Germans could hardly see their enemy anyhow, and the setting sun lit up the Germans for whom there was practically no cover at all.

* See General Bonnal's 'Manœuvre de St. Privat.'

† See *Kriegsgeschichtlichen Einzelheiten*, No. 16.

Vionville—Mars-La-Tour, 16th August, 1870.

Another unpremeditated encounter with the usual consequences. With the action of the Cavalry I have already dealt in 'Cavalry: its Past and Future.'

The preliminary Artillery and Cavalry surprise of the French camps by which the action opened, was most unfortunate for their Infantry comrades of the 5th Division who were struggling up through the defiles of Gorze with their Advance Guards only just emerging, when the French, recovering from their temporary confusion, came down upon them in overwhelming numbers. How hotly the Germans were pressed is evident from the fact that the Advance Guard Battery, the celebrated "9th Light," had to open with case, as it unlimbered, to clear its own front. From this moment onward all control of the fighting on this flank became impossible; as each unit came up it was forced into the line wherever it could find room, and the pressure of the enemy's fire decided the fluctuations of the combat. The 6th Division on the left, by Vionville-Flavigny, made a more orderly opening, but here, too, the overwhelming numerical superiority against them soon told; it was simply a case of "hard pounding" as at Waterloo, with occasional sorties to the front as for a time the enemy's fire fell off under the pressure of the German guns.

Uniformly, the Prussians advanced in skirmishers and company columns, with half battalions—*i.e.* two company columns abreast, as main body. Sometimes the half battalions deployed at once, but in all cases the distances, having been calculated to suit the old muskets and never sufficiently revised, proved too short against the chassépôt, all three lines fell simultaneously under the lash of its fire, and almost without exception the closed bodies broke through to the front and crowded the fighting line.

All this was not without its influence on the course of the action, for men and officers alike felt that control was at an end, and the lines fluctuated backwards and forwards as the resultant feeling of the crowd at each moment determined.

Looking closer at the statistics of the individual losses of regiments it is very evident that their steadiness fell far short of what the old "line" maintained. More than one body broke up at the first rush, and the men ran back to the nearest cover where, being rallied and reformed, they advanced again and fought gallantly enough for the rest of the day, losing up to 30 and 35 per cent. in the ten hours, so that if the rate of infliction of loss was constant that first rush must have been stopped by less than a 3 per cent. punishment.

From noon until Bredow's Brigade charged, about 2 P.M., the situation of the Prussians was critical in the highest degree. Along the whole of the left wing there was not a closed body in reserve, the men in the fighting line were spent and weary with fatigue, and suffering terribly from thirst—cartridges too were very low. Had Forton's Cavalry Division charged first, the Prussians must have been beaten, there were not cartridges enough left to stop them; but the innate intuition of the Cavalry leader was wanting on the French side, and the Germans got home first, paralysing for the remainder of the day all further offensive, and this result, too, would have been obtained equally well against modern rifles, for the ground eliminated the increase of range, double the number of rounds would not have made double the number of hits, and double the number of hits could not have stopped the Prussian squadrons; for not fifty horses fell until the Infantry were reached and ridden over. The heavy losses occurred afterwards.*

It is noteworthy also, and the remark applies to the whole battle, that owing to the extreme heat and dryness of the weather, the dust struck up by the bullets materially assisted the firers, and correspondingly demoralised the recipients. A heavy shower of rain might have most materially altered the conditions, in this case all in favour of the Prussians—another instance that the influence of a passing cloud, or of half a dozen other meteorological disturbances, may neutralise or modify the advantages of modern weapons.

The first troops to arrive on the Prussian side after Bredow's charge were the 39th Brigade. It had been intended to hold them back till they could combine an attack on the Tronville Copses with the 38th Brigade, believed to be close at hand, and orders to this intent had been issued, but the pressure of the moment was too extreme, and the 39th were hurried at their goal and already beaten back from it ere the 38th arrived.

Of all this the latter were unaware as they formed up at Mars-la-Tour and received their belated orders to advance, "Direction, North-East on the corner of the Tronville Copses." The following is a précis of Fritz Hoenig's admirable account of this incident in his 'Tactics of the Future,' now at length available in English dress.† Describing the advance he says, "About 3.30 we formed up for action about 1000 yards S.W. of Mars-la-Tour. The Generals, von Schwarzkoppen (commanding the Division) and von Wedell (the Brigade) had ridden on to reconnoitre. As they had

* This applies only to the Cavalry and Infantry side of the question. Modern shrapnel certainly would have made a difference; but, on the other hand, common shell, when it got home, stopped the horses. It is open to question how many shrapnel bullets will bring a horse down when once in his stride.

† See Captain Bowers' translation in the Wolseley Series of Military Works.

ample time, and the Guard Dragoons had been skirmishing with the enemy for the last two hours, there should have been no difficulty in obtaining the required information—more especially since the ground was completely open. At this moment the French had it all their own way. They had occupied the high ground above and north of Mars-la-Tour, and from its summit could see for miles around. To turn them out of it, without great numerical superiority, was impossible, and further to their left and our right our troops were being driven back out of the Tronville Copses which they had hitherto held.

“Fortunately they suddenly checked in their advance, and the only explanation we can give of this phenomenon, is, that the sudden appearance of our solitary brigade seemed to them to indicate the advance of a whole Corps at least, for it would have been presuming too much on the incapacity of their adversary to assume that our isolated advance had actually no connection whatever with any other movement.

“The position in which they halted was one just suited to their far-ranging weapon ; their front and right flank was protected by a ravine which ran parallel with it and then bent round sharp to the north, from the further edge of which the ground fell away in a glaxis-like slope for three or four miles, broken only by the village of Mars-la-Tour, about 1000 yards to the front ; and our approach was still further impeded by wire fences, which seriously incommoded us. The extent of their position was about 3000 yards, and was held by Grenier's Division in first line, with the whole of the remainder of the Corps (the 4th, l'Admirault's) in support. The open space we had to cross was about 2000 yards.

“The men were already fagged by a long march without food, and not a little depressed by the sight of the many wounded.

“Whilst we were waiting, the Roman Catholic chaplain (a former Cavalry officer, by the way) galloped up to our colonel, and after a word or two with him, he rose in his stirrups and addressed us in the following words : ‘Comrades, the IIIrd Corps is hard pressed, and to you is assigned the duty of relieving them. Attack, therefore, without fear of death, and may God be with you. Amen.’ His manner and words acted like a charm on all, and immediately afterwards the order to uncasing the colours was given ; the colonel added a few words in the same spirit, and the advance began, the direction being ‘North-East on the corner of the Tronville Copses.’

“At the time this order was originally given, the French right only extended to these copses and our movement was intended to form part of a combined attack with ten other battalions ; but long before our advance the French had taken up the position above

indicated, and the ten battalions attacking prematurely were already falling back, so that what we were really about to do was to attempt to march with five and a half battalions diagonally across and within easy range of the front of a whole French Corps.*

"But of all this the men knew nothing, as the enemy was completely hidden by the brow of the hill, and even when we moved off we were still in complete darkness as to where we were going.

"Generals von Schwarzkoppen and von Wedell had decided between themselves, but they only gave the general direction to the regimental commanders, and even the battalion commanders knew nothing whatever. My colonel, for instance, said sarcastically to me (Hoenig was his adjutant), 'This seems to be the chaplain's day, had it not been for him we should not have known what was going on,' and this remark fairly expressed our general feeling. But presently the enemy opened fire on our left flank and we began to wheel to the left to face him, all the battalions moving up into one line. Of Artillery preparation there was no mention, for our guns only came into action after we were already under the effective fire of the enemy."

Reverting to the movement of his own regiment he proceeds—

"The troops were advancing briskly, and as we passed von Schwarzkoppen and his Staff officer (von Scherff) the former seemed to anticipate the success of the movement; at any rate, as my colonel passed him, and as the violence of the mitrailleuse, artillery, and infantry fire fairly astonished us, he called out: 'Send out strong skirmisher swarms and we will soon have them out of that,' and a moment afterwards, 'Left shoulders up a little, on the cosses.'" These were the only orders we received throughout the fight.

"Meanwhile I. 57th had extended two sections in the above direction, and it seemed as if a wide gap would be formed between ourselves and the 16th Regiment. The general who noticed this, rode up and ordered a company from our battalion to fill it; but the next moment its captain fell, and the men bearing off to their left towards a fold of the ground which offered cover, the gap was again created, and was eventually filled by the Fusilier battalion of the 16th, so that from a very early moment the regiments were intermixed.

"The co-operation between the battalions was practically nil. I was on horseback till I fell wounded at the moment almost of

* The brigade consisted of the 3 battalions of the 16th Regiment, 1st and Fusiliers of the 57th, and 2 Pioneer companies. The Fusilier companies are numbered 9, 10, 11, and 12.

our repulse, exactly in the centre of our whole line, and could see all round me until the smoke became too thick.

"The battalions pressed on independently from left to right, whilst our batteries fired over our heads. As the I. 16th and II. 16th were on the shorter line they managed to penetrate the furthest, crossed the above-mentioned ravine, and kept their start to the end. The right, Fusiliers (57th) and Pioneers, had the widest arc to cover, and in spite of every effort, must have reached the alignment some half-hour later.

"Until we reached the beginning of the descent towards the ravine, about 600 paces from the enemy, our losses had not been heavy, but now we came under an indescribably heavy cross fire, for we who had expected, or, better, been expected, to outflank the enemy, now found we were ourselves outflanked.

"The enemy, who had hitherto lain flat on the ground, now rose, and overwhelmed us with a fire which caused us to halt and to attempt to return it. This ruined our attack, for the men threw themselves on the ground, which afforded them no cover. Two-thirds of the officers were soon down, and after a time the inevitable came, and the troops fell back."

The Prussian official describes this attack in the following words: "With regardless energy, however, the Westphalian regiments press onwards; the second line moves up to the skirmishing line in order to fill the vacancies in the rapidly thinned ranks; only weak detachments are left in close order behind the front. Alternately making rushes of 100 to 150 paces and lying down, the companies hastily descend the hillside. Here comes unexpectedly in view a steep ravine, in places hard on 50 feet in depth, like a ditch in front of a strongly occupied entrenchment, but even this does not stop their advance. Scaling the opposite slope all five battalions rise quickly to view within 150, 100, yea, even within 30 paces of the French line," and more in the same strain. But Hoëmig will have none of this blarney, and contradicts it in the following manner:—

1st. "The five battalions did not, as therein described, cross the ravine and appear within 30 or even 100 yards of the French line. Of the twenty companies only eight of the 16th got across at all, and these, having the shortest way to go and the best cover, anticipated the completion of the French line, and were eventually turned out by a counter-attack.

2nd. "The needle-gun and chassépôt did not act with devastating fury against each other, for the former hardly got within effective range, and we suffered our losses without the power of effective retaliation.

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3rd. "The French certainly got within 30 to 50 yards of us, but this was due to the cover afforded by the ravine and the dense smoke of our own weapons ; and if in places it came to a hand-to-hand struggle it was because our men were too exhausted to run away.

4th. "It was only in the retreat the losses rose to the point of dispersing us altogether. Fortunately for us, as the enemy had passed the limit of our advance by some 150 yards, the 1st Guard Dragoons charged them and rode them down. They ran back, masking the fire of their own lines in rear, shooting wildly in every direction, and throwing kits and arms away in a general panic. Then followed a general pause along the whole line, even the artillery ceased firing, and the battle appeared at an end.

"The 38th Brigade had marched twenty-five miles under a burning sun to the battlefield ; between 2500 to 3000 yards from the enemy one-third of each company had been extended as skirmishers by the general's direct order, who rode about saying, 'Only skirmishers, gentlemen, only skirmishers,' to all he met ; and shortly afterwards each company in first line reinforced its skirmishers with its second section, keeping only the remaining one as a support in close order. The second line was formed of half battalions in company columns. Finally all were merged in one firing line except two companies, who remained in close order, lying down, by the direct order of my colonel, who remarked as he gave it me that he did not expect much from the style of fighting going on, and, to complete the picture of the last moment, companies 12 and 9 of the 16th lay in close order on the ground ; companies 9, 10, 11, and 12 of the 57th stood upright in line close up to, and firing volleys over, the heads of their skirmishers, and made one attempt to go forward again to the attack.

"Every sort of formation was therefore tried—line, column, and skirmishers—on a field of battle which bore only one character."

Space compels me here to leave Hoenig's admirable account ; I can only hope to have given enough of it to encourage others to study it, for together with its sequel, 'Twenty-four Hours of Moltke's Strategy,' it will long remain invaluable to all company officers zealous to instruct their men. But now let us analyse more closely the whole picture presented.

There were 4500 men present to attack over a front of 3000 yards—1½ men to the yard—and these men were not launched straight at the enemy, but diagonally across his front. For the first 1000 yards, at least, across which the men advanced, the enemy was quite invisible to men on foot, hence the fire they received must have been entirely unaimed and the hits conditioned

solely by chance. What possible object, therefore, could be served by extending them so soon? There was no previous reconnaissance by the troops themselves, and what knowledge the generals possessed was not imparted by them to their subordinates. There was no Artillery preparation, and a threat at the enemy's flank was entirely out of the question.

Had it been an old-fashioned British brigade attacking, on the lines of the Peninsular tactics, our light companies would have gone to the front, one man to every twelve paces, to see and to report, and the following battalions in "line," when they did reach the brow of the hill, could at least have brought every available rifle into action from the first, thus meeting the French on fairer terms than the Prussian fighting line, which, by its greater density, masked the fire of the troops in rear till they could work forward to the point the former had reached halfway down the slope towards the ravine.

Had it been a modern South African brigade, advancing in successive lines of men at 10 paces interval and 200 distance, could any power on earth have made them change position half left when once on the move? or, assuming they had been set in straight at their object, what would have been the fate of each following line as it topped the hill and was confronted by the closed line of the French bringing twenty rifles to bear on each man of its assailants? As the odds against that man would be $20 + 19 + 18 \dots + 1 = 100$ the answer can hardly be doubtful.

Nevertheless, and in spite of all these disadvantages, forming altogether the most untoward combination conceivable, the Hanoverians did succeed, with a strength hardly equal in all to the proper standard of a first line only, in accomplishing all that a first line is expected to, even when the way has in a measure been prepared for it by Artillery fire, viz. they got within almost fixed-sight range of the enemy, and the men remained sufficiently under the control of their company officers to fire volleys throughout the whole half-hour that, Hoenig tells us, the stationary fire-fight lasted, and they were not as well drilled as Germans are now, or our men should be.

Now had the attack been foreseen and adequate troops, according to the modern German scale, placed ready—not less than a whole Corps for this front—the first line would have been followed by a second at about five minutes' time limit, say, 500 yards' distance, and covered by the fire of the first, their losses would have been correspondingly reduced; the two together would now have nearly equalled the fire power of their adversary, and, as a consequence, a third and fourth line would have come up with

less losses and more confidence still, until ultimately a sufficient pressure would have been accumulated to break through the opposing barrier, and this is the whole secret of the modern continental attack, identical in spirit to that which the Americans worked out for themselves in the days when the advantages of the defensive were at a maximum.

It is true the gross losses might have been heavier, but victory is cheaper than defeat at any price, and no one brigade would have been broken and demoralised to the extent which actually occurred.

One word more as to the incidence of the casualties. Hoenig calculates that the advance took up thirty minutes, the stationary fire-fight thirty minutes, and the final retreat about the same period, and we may assign the losses in each in the following proportion: about one-third to the advance, one-half to the fire-fight, and the remainder to the retreat, for the French pursuit was soon arrested.

The total being just under 2700, we have in round numbers 900 in the first stage, 1350 in the second, 450 in the last. Now, assuming that the losses were uniformly progressive in the advance, then in the first minute the whole body lost three men, in the second six, and so on till in the 30th they lost sixty; or, taking the rate of march at about 100 yards a minute, during the first minute there was one man down to every five acres about, and so on up to the last, where each had only 100×50 square yards to lie upon. Even during the fire-fight only one man fell each minute to about every sixty yards, and at the end of the half-hour only one man to every two yards or thereabouts was down.*

Now compare the kind of slaughter in the old days, where the whole duration of an attack sometimes did not exceed ten minutes, and 50, even 60 per cent. went down in the last 150 yards, or think of the breaches of Badajos. If troops in the past could be got to face such shambles again and again; if men of Anglo-Saxon strain, peace-trained too, as the 1st Maine Heavy Artillery faced equal punishment twice within a few weeks, not forty years ago;—what reason is there to suppose that, with the same standard of discipline, they should fail us in the future, as our correspondents who criticise foreign manœuvres so gravely assure us? Let them explain the problem if they can.

* This was written nearly two years before the recent Japanese victories, and the imaginary attack described is practically identical with that which Meckel so successfully taught them.

CHAPTER VI.

The battle of Gravelotte St. Privat—The northern half of the field—Manstein's surprise—French counter-attack—Its consequences wide-reaching—Hoenig's views—Premature issue of orders—Von der Goltz's opinion on Cavalry scouting—The 2nd Brigade of the Guard—The cause of its losses—French waste of ammunition—The 1st Brigade, its attack directed on St. Privat—The advance in "line" of the 2nd Grenadiers—Colonel Walford's translation of Hoenig's work—Comments on the whole battle—Local counter-attacks prove disastrous—Reference to South African War—Numbers engaged and losses—How the battle would have gone under modern conditions of armament—Conclusions—After Gravelotte—Cause of confusion of thought in tactical literature—Exaggerated importance attached to common shell fire.

The Battle of Gravelotte St. Privat, 18th August, 1870.

WANT of space forbids any attempt to unravel in detail the incidents of this struggle, fought out by nearly 300,000 men on a front of ten and a depth of about five miles. Vast as these dimensions appeared at the time, the numbers at least had previously been paralleled, as at Leipsic and Koniggrätz, and the actual slaughter materially exceeded, notably at Borodino and Ligny. But all these figures seem likely to be dwarfed in the future, when the decisive struggle between nations which can put twenty Army Corps each in their first line comes to be fought out.

My purpose is merely to indicate the influence exercised on the course of the battle by preliminary errors in reconnaissance, which may be considered unavoidable in peace-trained Armies, by the nature of the ground on which it was fought, and by the relative fire-power of the weapons employed.

On the northern half of the field the sequence of events was as follows: Owing to faulty reconnaissance, the position of the French right wing had not been fixed, and all orders for the day's movements had been based on the assumption that their line did not extend beyond Amanvilliers. Not until 10.30 did the situation become clear to the Head-quarter Staff; but before the new aspect of affairs could be circulated to the Corps commanders, General von Manstein, riding in front of his troops, had discovered a great French camp, apparently in a state of profound repose, on

the heights about Amanvilliers, and unable to resist the opportunity for a great Artillery surprise, had brought up his guns and opened fire from some twenty batteries at once.

The result of this cannonade (common shell only being available) appears to have been quite trivial, for the French immediately fell in on their appointed position and developed a counter-attack with such vigour that in a very short time they had actually broken in through the line of guns, and four batteries were temporarily in their possession.

To recover the guns at all costs became the order of the day. The nearest Infantry within call, the Hessians, were hurried to the field, and, being thrown into the fight without due deliberation, soon exhausted their momentum ; to save them the next nearest troops, the II. Division of the Guard, were in turn hurried up, then the I. Division, and ultimately the Saxons, by which time numbers had begun to tell. The setting sun shone full in the eyes of the French, and the final assault succeeded almost without material loss to the assailants.

The premature action of Manstein had also upset all arrangements to the southward, and if the results on this wing were less serious, still it gave the initial impulse which destroyed the unity of Moltke's design, and materially contributed to upset the equilibrium of Steinmetz's temper with very disastrous consequences.

Hoenig maintains that the fundamental cause of this dire sequence of events is to be found in the advanced age of the Royal Commander-in-Chief, and the consideration it was necessary to take for his comfort and safety. A younger man would have bivouacked on the ground close at hand, and himself have ridden out to see with his own eyes ; but the risk was considered too great, and to avoid it the meeting of all the Corps commanders was called at 2 P.M. on the 17th near Flavigny. Orders were issued based on the morning reports of the Cavalry only, and when this business was concluded the whole Royal Head-quarters drove back to Pont à Mousson, nearly twenty miles away.

Von der Goltz, in his latest work, 'Krieg und Heerführung,' says, in discussing this incident, that it cannot be maintained that the Prussian Staff were badly served by their Cavalry in 1870, and their failure to discover the true position of the French must be attributed to the ordinary friction of campaigning conditions generally, and this seems a fair summary if regard is had solely to the time at which the meeting of the Corps commanders took place. The Cavalry which had fought at Vionville was, in fact, completely done up ; they had been in the

saddle all day long in intense heat, the water supply was most scanty, forage insufficient, and practically every squadron on the ground had ridden in one if not in several charges with, in many instances, very heavy losses.

Friends of mine who went through that day assure me that the exhaustion of all ranks, physical and mental, was complete, and neither men nor horses could do more than was actually done ; yet it was on the necessarily incomplete reports, furnished by men in this condition, that orders had to be issued ; for the fresh Cavalry arrived too late in the morning to take over their duty. A modern German Cavalry Division would no doubt have cleared up the situation in a couple of hours even then, but it must be borne in mind that the Cavalry Division and its duties were not understood then as they are now.

How many casualties of the total list of the day we should be justified in assigning to this first cause, it is impossible to state with any degree of accuracy, for in the subsequent execution of the several attacks there were errors of detail which presumably would have occurred in similar fashion whether the subordinate commanders had been hurried in their decisions or not.

Thus the 2nd Brigade of von Pape's Division of the Guard* owed its misfortunes primarily to one of those accidents of manœuvre which no foresight can be expected to anticipate. It was advancing towards its place in the general alignment some time before any attack had been determined on, or objective assigned to it, hence with no idea of what lay before it. A galloper was sent after it with the order to "halt and lie down," which order, of course, was immediately obeyed. A few far-ranging French shrapnel from time to time burst over it, and it was evident that a big fight was raging to its right front. Then at length the order to form for the attack of the heights in front was received, and only then did the commander realise that the village of St. Marie au Chêne lay so close on his left that it was impossible to open out to the prescribed intervals on the ground on which he stood. To go back was obviously out of the question, so there remained nothing for it but to advance till clear of the obstacle in the formation in which the troops stood—*i.e.* close column of regiments side by side. Even this movement did not appear particularly dangerous, as they were still well outside the extreme range for which the chassépôt was sighted, and naturally did not expect the waste of ammunition which followed.

The moment the column was put in motion the whole French line broke out with an incredibly rapid fire, and covered the

* See Scherff's *Kriegsgeschichtlichen Einzelheiten*.

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ground with a hail of lead ; at once the air was thick with dust from the falling bullets, and the deployment did not go off quite as on a parade ground. Ultimately every one did find his way into the fighting line, and the whole pressed on to about 500 yards of the French position, where they lay down and began to reply to the enemy's fire.

In the Guard Rifle battalion all the officers had fallen, in the others about one-half ; but it is evident that the actual losses amongst the rank and file had not been excessive at this period, for the total losses of the brigade were 1847 men out of 6000, inflicted in a period of exposure of no less than five hours, for the attack commenced at 5.30, and men were falling from their own and the enemy's fire till close on to midnight. If we put the cost of the first half-hour at one-third ; of the stationary fire-fight, which lasted two hours, at another third ; and the remainder for the final assault and all other causes, we shall be well within the mark, and this gives only one man in nine down as the result of the initial surprise, a percentage which certainly would not have stopped the Guards but for the preliminary confusion.

I have characterised the French expenditure of ammunition as wasteful, but, seeing that it actually sufficed to stop the Prussian attack, the expression may be challenged. My answer is that all French writers agree that the position was only ultimately lost through failure of ammunition supply. Now, aimed fire at 600 yards would have stopped the attack equally well for one-tenth the number of cartridges, leaving the balance in hand for the last and fatal rush ; on the other side, it is only fair to say that at this first period the French Infantry were still well in hand, and directed their fire by bugle sound on every clump of men that presented itself to their aim ; after another two hours of Artillery preparation this would probably have no longer been the case, but then the French contention that they owed their final ejection to the failure of cartridges would become untenable.

The 1st Brigade (von Kessel's) attacking north of the St. Privat-Briey chaussée, though not so unfortunate in its choice of a halting place, had further to go, and was also caught in the storm whilst endeavouring to change front half right. Since the order to move reached both brigades simultaneously, this would have brought them up on the left of the 2nd Brigade some minutes after the latter were already in confusion, a result which could not but be without its prejudicial influence. Moreover, even as late in the day as this, the true extent of the French front had not been realised, for the Brigade was ordered to attack St.

Privat, whereas the French actually lay in Roncourt and between the two villages, so that the Prussians came in for a cross-fire as well as a purely frontal one.

In the accounts of eye-witnesses, given in the regimental histories, all alike note how useless the prescribed distances proved as a safeguard against losses. Skirmishers, supports, and reserves all came simultaneously under the sweep of the bullets, and where the men did not break through to the front and join the fighting-line without orders, every company column deployed into line as rapidly as possible. It is also noticeable that the 2nd Grenadiers actually did march to the attack with its three battalions in line, with "drums playing and colours flying," an expression which in Prussia means in the "parade marsch," as in an advance in review order, and, thus formed, not only reached the limit attained by the others, but went some distance beyond it, losing neither more nor less than their comrades, but retaining their men under control to the very last.

Space has compelled me to condense this account to the utmost, but I trust I have written enough to dispel in my readers' minds the cloud of legend which in England has accreted around this central incident of the war and formed the basis of so much unsound tactical reasoning.

Closely examined, the legendary story of 6000 Prussians slain in ten minutes, etc., all comes to this.

Without due Artillery preparation 12,000 men were sent in to the attack of an exceptionally strong position, for which, normally, 20,000 would have been considered, in any case, only reasonable. Owing to initial mistakes, which could not have been foreseen, they entered the zone of action in considerable confusion, and in succession, not simultaneously. Instead of outflanking, they were themselves outflanked by fire, to which they could not return a shot owing to their obsolete armament; yet, notwithstanding, they reached within 500 yards (600 paces) of their enemy, those units moving in line, with their men still in hand, and with losses, as a whole, not exceeding 10 per cent. At this distance with equal armament they would have had a fair chance of beating down their opponents' fire unaided, and the impetus of a fresh closed line in rear would probably have carried them onward, even without further Artillery assistance.

For the details of the fighting about Gravelotte, I must refer the reader to Hoenig's 'Twenty-four Hours of Moltke's Strategy, a translation of which, by Col. Walford, R.A., has been published by the R. A. Institution, Woolwich. No more wonderful study of a battlefield has ever been written, and there is no work with which

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I am acquainted more invaluable to the student who wishes to form an independent opinion on modern tactical points.

The book is the more remarkable, for whilst it describes scenes of panic and confusion, far worse than any in the 'Midsummer's Night Dream,' the writer yet shrinks from drawing the only logical conclusion as to the evils inherent in the extended order system when not based on the previous drill training of the soldier, as in the case of our own old Light Division. For my present purpose, however, it will suffice to point out that, in spite of all defects of leading and difficulties of the ground, each German attack, whether prepared or not by Artillery fire, whether made on a broad or narrow front, did in every instance succeed in reaching the 500 yards limit in front of the French position. There they invariably broke down, because at that distance their weapons possessed no practical value at all, and because the superior leading did not understand how to secure the timely reinforcement of the fighting line; but even had this last condition been fulfilled, the result must have been the same, for an attack can only get home as a consequence of fire superiority previously obtained, and this, with the existing inequality of the infantry armaments, was utterly out of the question. But imagine equal weapons on both sides, and apply the reasoning I used in the similar instance at Vionville, and the result works out to the same conclusion, viz. with equal armament and courage on both sides an attack, foreseen and provided for by a competent staff, will always get home against a passive defence.

In this instance, however, the French defensive was far from passive, on the contrary they left their entrenchments and came down on the Germans again and again with all their old *élan*, but in doing so they gave the best illustration possible of the inherent weakness of this form of action when directed down hill and opposed by both Infantry and Artillery fire.

They might have remained in entire security for hours behind their entrenchments, for the German Infantry fire barely reached them, and their common shell did no appreciable damage, not even to their nerves, they claimed afterwards; and meanwhile the battle might well have been won by a judicious use of the General Reserves on another portion of the field, but the moment they came out of their cover they were exposed to the crushing effect of the whole German Artillery, which, in every case, even when practically unsupported by Infantry fire, sufficed to arrest them, and they were beaten back often with very considerable loss, though there were no shrapnel for them to face.

This problem of a counter-attack direct out of entrenchments

remains the most difficult of the many difficult ones the defender has to face. It has not presented itself in the recent South African fighting, and hence there is a tendency to ignore its existence. But the reason why it did not arise is clear and obvious. The Boers were mounted men, better mounted too than we were, and they had all South Africa behind them to retire into. Deprive them of their horses, tie them down to the defence of a well-defined line as in European warfare, and the difference will be at once apparent, together with the inherent weakness of their methods of entrenchment. But into this question I propose to go at length in my final chapter, here I only wish to call attention to its existence; its importance will become more apparent as I proceed.

Returning to the field of Gravelotte, it is worth while calling attention to the actual numbers engaged, which differs more widely than usual from the total troops upon the ground.*

In a position of unexampled advantage for the nature of their weapons, the French had 100,000 infantry, 13,300 sabres, and 520 guns, including 66 mitrailleurs, and out of this position the Germans succeeded in turning them by the employment of only 109,200 rifles, no sabres, and 620 guns, out of the 166,400 rifles, 21,200 sabres, and 732 guns they had made available for that purpose. It is true that by bad leadership only 83,500 rifles, 550 sabres, and 398 guns, including 54 mitrailleurs, actually came under fire on the French side, but still according to all received umpires' rules, based on equality of weapons, the Germans ought to have needed not only every man they had on the ground, but twice as many more in addition; yet, as we have seen, their leading was far from faultless, and the inequality of infantry armament against them quite phenomenal.

I would ask my readers to go carefully through the figures of other great battles, fought between white men equally matched in quality as were the Germans and French on that day, and try to find an instance to equal this—not a battle between two forces manœuvring in the open as at Roszbach or Leuthen, but a struggle for the possession of a fortified position of exceptional strength, and see if they can find any similar case. If they cannot, then the inference to my mind is obvious, and that is, that the umpire rules are not in harmony with the facts, and modern weapons have not increased the power of the defence as these rules allege. Let us assume the same armies with the old short-range muskets of the last century in their hands and the corresponding type of field guns. Could even Napoleon have taken the position? I doubt it, for the slope and nature of the ground everywhere precluded the formation

*. From *Kriegsgeschichtlichen Einzelheiten*, No. 16.

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of his massed batteries for case shot preparation, on which the successful issue of his assaults depended; but had he done so what would have been the cost in human life? Borodino (partially fortified) with its 24,000 killed and wounded, 24.6 per cent. of the combatants, Ligny (unfortified) with its 14.7, supply the answer; but at Gravelotte St. Privat the Germans, in spite of all their tactical errors—errors Napoleon was not in the habit of making—only lost 20,000 altogether, a bare 10 per cent. of their full numbers, and about 20 per cent. on the numbers actually engaged.

Now try another assumption; give both sides the latest magazine rifles and modern shrapnel, lyddite, Q.-F. guns and howitzers. Smokeless powder would not have helped the French in their actual position, but, the temptation for the Artillery surprise by Manstein would not have existed, the German troops could everywhere have remained hidden out of sight until the Artillery lines had been quietly and deliberately formed, and under the hail of their shrapnel not a head could have shown itself on the French side until the advance of the Infantry masked the guns; but then the Infantries would have met at short range on practically equal terms, and the result would have depended, as it always has done in the past, purely on the courage and determination of the men behind the guns.

Nor would the slaughter have been necessarily any the greater, for the initial blunders would not have been so far reaching in their consequence; not because I am supposing greater tactical ability in my imaginary leader, but because the increased range of modern weapons of necessity give far greater opportunities of deploying troops for attack under cover, in proportion to the greater area of ground lying within the shot-swept zone.

This will be obvious to any one who will stand on the parapet of any old fortifications. Chatham lines, or the more recent Ports-down Hill forts will serve: It is hardly possible for a mouse to find cover within 500 yards of either, but you can conceal whole Armies within 4000 of the one or the other. Engineers have long since recognised the application of their principle in the case of sieges, but a battle is only an abbreviated siege. Why, then, not push the principle to its logical conclusion?

It is time this bugbear of the casualty list was definitely laid. Given equality of weapons, and reasonable skill in the practice of handling troops, the name of the weapon or of its inventor has nothing to do with the matter, for it is not the weapon which kills but the projectiles it delivers, and whether one man with a Mauser fires 30 rounds a minute, or thirty men with some other weapon fire one round a minute at equal distance and under similar

conditions is quite immaterial ; in both cases, if troops are sent blundering on against either, the result will be equally disastrous, and this is what all tactical evolution has led us to ; as the weapons have increased in range the danger of outflanking has developed in proportion to the range, and to meet this danger the line has been extended. But there is a limit beyond which this extension cannot go, as was shown in the early wars of the French Revolution, when the Austrians, having extended their line beyond due reason, Napoleon massed his men and tore his way through their front which no longer possessed fire-power sufficient to stop him. De Wet seems nearly to have divined this secret when, the other day, he galloped through our line at Springhaan's Nek ; but he had not imperial power to compel obedience, and we could not apply the method ourselves, because the Boer will not (very wisely) stand to meet the shock as ordinary Infantry must.

The immobility of Infantry fixes the limit of practical extension, and in all countries attacking Infantry have gone beyond it. An advancing line must always have at hand at least an equal number of rifles as the enemy under cover can bring to bear upon it, otherwise they risk being destroyed in detail. There is no risk of their being destroyed *en masse*, for troops will not stand up to more than a certain percentage of punishment, according to their quality ; when that limit is reached they lie down and a stationary fire-fight ensues until the pressure of their enemy's fire against them relaxes, or fresh reinforcements carry them on.

This percentage is not, of course, the whole percentage a body of troops will endure in the whole day, but only what will suffice to bring them to a temporary stand. They will hold out for hours on the ground rather than run away, but they will not go forward until either the enemy's fire is shaken by outside influences—guns, for example—or the arrival of fresh troops, or both, give an impulse forward, and the greater choice of cover for masses not for individuals the longer range of the weapon allows, has added enormously to the possibility of such action of outside influences being brought to bear upon the enemy.

After Gravelotte the Germans had learnt their lesson. The Cavalry Divisions pushed boldly to the front, the preliminary reconnaissances were carefully carried out, the guns were given time to do their work, and the Infantry no longer rushed blindly to destruction.

The spirit of the French too was fairly broken, they had lost confidence in themselves and in their leaders, and in front of them the Germans could take tactical liberties, which at an earlier period of the war would have met with very severe punishment.

It is to this cause that much of the confusion which for some years after the peace, prevailed in their tactical literature. Just as for the moment there is a school in our midst which believes the South African War to have been the first and only war in history, and on its very unusual experiences are prepared to recast the whole system of our drill-books, so in Germany there were hundreds who based their deductions only on their own reminiscences, and believed that in the tactics which had succeeded against their half-trained opponents, they had at last found the royal road to victory.

Nevertheless these combats with the French levies deserve far closer study than they have hitherto received in England, but that study must be based on a correct appreciation of the variation which had occurred in the contending forces. In any case, they suffice to settle the question whether the man or the weapon is the ruling factor in tactical methods. The weapons remained the same, and numbers now were almost invariably on the French side, yet the confidence in themselves the Germans had acquired, made them shoot so much straighter, that now they were able to carry positions with one-third the number of men to the yard that had formerly, as at Gravelotte, proved insufficient, though their attacks had very often to be made over ground even more favourable to fire effect, than any, except Gravelotte, that they had previously met with. Halve the numbers of the French Infantry, and give the remainder magazine rifles to make up for the diminution in numbers, would the result have been different?

How would the long extended lines of the Germans have fared against the charges of Osman Pacha's Turks, or of the Ghazis at Ahmed Kehl? We know how it sometimes went with the Russians, better armed and with more rifles to the yard in the fighting line, and we know too that it took close order volleys from Sniders and Martinis, not to mention forty-pounder case, to stop the rush of the latter. Need we refer at length to our Egyptian experiences? We did not form squares because we liked it, but because experience taught us that it took every available rifle in the fighting line to stop the rushes of our assailants, and would it take more or less to defeat a charge of resolute mounted men within the same distance. The target is larger, but the time of exposure shorter, and it takes far more bullets to bring down a galloping horse than to stop a man on foot, but in this period of the war of 1870 the French Cavalry had practically ceased to exist.

A further consequence was the exaggerated importance which came to be attached to the power of common shell to shake Infantry under cover.

After Gravelotte, there were no more too previous rushes against unshaken Infantry. The guns were given time for their work, and since the Infantry did get through without much punishment, it was assumed that the task for the guns to execute was always the same in all cases, whereas between shaking staunch veterans behind shelter trenches and unsteady raw levies, there is a very great difference indeed.

This led to a very false conception of the time necessary for Artillery preparation, and the limits of its power, which might have had most serious consequences had the Germans since found themselves at war, for practically all time calculations are based on this factor, and on this alone. For instance, if it was held that two or three hours at least would be required for the act of Artillery preparation, the defender could feel secure, that he would have ample time to move up reserves from a distance when the threatened point was revealed; * the assailant likewise feeling confident that he would not be disturbed in his deployment, could send his guns boldly to the front, whilst his Infantry plodded along upon the roads.

It was the French who were the first to perceive all that the introduction of shrapnel meant in upsetting this equilibrium. That they should do so was a natural outcome of the Napoleonic case shot traditions, and explains their readiness to make very considerable ballistic sacrifice to hasten the introduction of their Q.-F. gun.

For imagine the position of a defender, with his reserve still some miles to the rear, when his line of trenches was suddenly overwhelmed by such a storm of shrapnel that nothing human could show its head above the crest line and live, whilst, under cover of this hurricane, the Infantry advanced in dense fighting lines, with all the dash and rapidity for which the French have always been famous.

I am aware that it will be said that the effect of Artillery fire, whether shrapnel or lyddite, has been shown by the experiences of South Africa to have been much overrated, but I know of no instance in that campaign, except Pieter's Hill, in which anything approaching the French storm of projectiles has been attempted—for the French claim a fire-power of ninety battery rounds a minute, 15 per gun a minute, which gives in round numbers 18,000 bullets per hundred yards of front in the same time.

Assuming the shells to burst 50 yards short, then all these bullets would pass about 10 feet above and 10 feet below the crest line, and every square foot of surface within their sweep would

* This is exactly what has since happened at Kuliencheng.

receive three hits on an average every minute, even if no convergence was attempted ; even if men could be found brave enough to face this storm, the dust of the bullets striking short would effectually prevent their seeing anything to aim at.

Those who will read Langlois' papers on Field Artillery, and read between the lines, will see plainly the object aimed at, and I can recall many instances in German manœuvres where, bearing these figures in mind, it was possible to forecast a terrible experience for the latter had war between the two Powers resulted.

For English readers this matter deserves particular attention, because had the war party prevailed in 1900, and the battle of Dorking become a reality instead of remaining a fiction, it was on this form of attack and use of Q.-F. guns, entirely unsuspected in this country, that the French confidently relied for their anticipated success.

CHAPTER VII.

First impressions of the battlefields of 1870—Their effect on British opinion—Prejudice against close formations *per se*—Conditions of armament ignored—German skirmishers *v.* French Line—Intensity of fire-effect *not* a constant quantity—Fire superiority prime condition of successful assault—Later German writers—Meckel, Malachowski, and Hoenig—Importance of drill training—M. Bloch's mistakes—Drill *and* education—The origin of the purchase system—The company-father—Equalising the companies for drill and the consequences—Effect of short service on officers—Definition of discipline—The scientific justification of "smartness"—Kenneth Mackenzie and Sir John Moore, 1803—Regimental orders—52nd Regiment, 1839—Line regiments—Slow promotion and the consequences—"The survival of the *unfittest*"—Introduction of short service in England—Garrison instructors—Absence of reliable data to work on—Want now supplied by work of the historical sections in France, Germany, and Austria—Progress in Germany—The chain of responsibility—Scherff's criticism and his recommendations—Opposition by von Schlichting—Return to the old distinction between Light Infantry and Line recommended—Progress of Artillery—Universal introduction of shrapnel—Q.-F. guns—Their fire-power—The consequences for Infantry—The decision will now again be given by closed Reserves—Explanation of heavy columns seen on foreign manoeuvre grounds—Bar-sur-Aube in 1891—Vandœuvre—Difficulties of reconnaissance in Europe over-rated.

IN every Army there exists a certain number of impressionable individuals who are constitutionally incapable of waiting for sound data on which to found correct generalisations, and the Prussian Army was no exception to this general rule.

Scarcely had the smoke cleared away from the battlefields of 1870 before the bookstalls were inundated with studies and deductions absolutely valueless for the purpose for which they were designed, but highly interesting evidence of the impression events had made on the writer, and of the standpoint of knowledge to which he had himself attained, often an exceedingly humble one.

The British public at the time were also keenly interested in the war, and publishers expected to make a paying business out of translations of these pamphlets; but, unfortunately, they were mistaken, the interest in these works died out quickly, and just as the books written by more competent investigators were beginning to appear, the publishers refused to bring out any further translations, and the great bulk of the officers of this country were cut off from all direct access to reliable evidence, and we had to build up our theories on exploded data.

Fortunately for us, the Army at large is very conservative, and the new theories did not assimilate well with received tradition ; and though we owe several minor mishaps to the attempt to stand up to the resolute rushes of fanatic enemies with insufficient fire-power, common-sense soon came to our rescue, and on the whole we can congratulate ourselves that things have been no worse.

The worst feature in the whole case was that we adopted as a fundamental precept the idea that the Germans had been compelled to fight in extended order, because against modern weapons close formations, *i.e.*, line and company column, were found to be impracticable.

But this assumption first of all left out of consideration the special conditions of armament the Germans had to fight against, and ignored the whole chain of circumstances which had led to this almost exclusive use of extended order. There never had been in the past a war in which one side had to close in from 2000 to 500 yards before it could bring its own fire-power in reply to bear on the enemy, and the inequality did not cease here, because even when the Germans got to the 500 yards limit the intrinsic accuracy of their weapon was barely one-third that of the *chasse-pôt* at the same range. Further, though the Germans knew that the French would meet them in line behind entrenchments, they, in accordance with their traditions, to which I have called attention in previous chapters of this study, elected to attack them in extended order, thus diminishing beforehand the weight of their return fire and increasing unnecessarily the number of men exposed—*i.e.*, the area of the vulnerable target. • They intensified also in this way the moral effect of the enemy's fire, because the supports had to follow the skirmishers so closely that, as a rule, the former served only as stop-butts to the latter, the columns drew a converging fire, and the men in them fell fast under the most adverse conditions for the maintenance of discipline, *i.e.*, without being able to fire in self-defence. The Germans therefore piled up the odds against themselves somewhat in the following manner.

Every German skirmisher had to advance 1500 yards under fire without replying, and then, even assuming the line still kept up to its normal density of one man to two paces, he had to face five French rifles, three times more accurate than his own, the firers cool and unshaken behind breast-high cover ; it was as if a blown and half exhausted man with an old horse-pistol had attempted to fight five men under cover armed with good duelling pistols, who were allowed to shoot at their man as he hurried in to close quarters.

That the Germans ever succeeded at all speaks most highly for their devotion and courage, but nothing for the judgment which

selected the formations, and success or failure under these circumstances can have no bearing on the problem as between equal weapons.

Again, it is not the modern weapons which do the killing, but the bullets they project, and since it is easily possible to show that a greater number of bullets have often had to be faced in the old days than in 1870, both in line and column—as, for instance, at the Redan,* in the final assault—the bottom falls out of the argument altogether.

Lastly, the phrase assumes that in action the intensity of fire-effect is a constant quantity, an assumption diametrically opposed to all the teachings of military history, as I have endeavoured to set forth.

From the earliest times the fire-power of unshaken Infantry has been in excess of its assault-stopping requirements, and, indeed, this has been the fundamental rule on which all defence arrangements have been calculated. Assaults have only succeeded as a consequence of an acquired fire superiority, and the only difference between then and now lies in this, that the power of concentrating fire on a point, the cardinal condition of successful acquisition, has been increased in proportion to the increment of range and the accuracy of the weapons.

Given a fire superiority, by whatever means attained, and it is evident, that by giving it time enough to act, you can reduce the return fire to any degree of inaccuracy you please, and then attack in any formation which suits. If you have killed all your opponents, or, at least, frightened them to such an extent that they can no longer take deliberate aim, it must be evident that the question of formation does not arise at all.

It is very extraordinary to notice that the exceptional nature of the conditions under which they had had to fight is hardly ever alluded to by German writers. Now and again a mention of them occurs, but generally the tendency everywhere was to assume this fire preponderance on the part of their opponent as normal and try to find a way to meet it. In this the writing part of the Army soon divided into camps. All alike had been struck by the “rudderless confusion of the fight,” as Meckel calls it; but whilst the one camp assumed that this was inherent in the natural order of things—a consequence of the breech-loader—the others turned to the casualty lists, and comparing them with the past, asked how it happened that their ancestors had borne such much heavier punishment in the past without betraying similar unsteadiness;

* See Tottleben's plans in the Russian official history of the Crimea—a magnificent work, forgotten nowadays.

thus Meckel, in one of his lectures, after referring to the losses in the Seven Years' War, said, "But we do not learn that Frederic the Great's officers spent their winter evenings in discussing how the losses of the next campaign were to be kept within narrower limits."

Generally the sympathy of the working part of the Infantry was with the latter body, of whom Meckel, Malachowski, and Hoenig may be considered the spokesmen, though the last-named writer sometimes oscillates over to the others, and during my many visits to Germany from 1872 to 1883, and subsequent to my return from India in 1889, I found that everywhere the common-sense of the majority had come to the conclusion that with equal weapons in their hands their own fire was their best protection, and in the company training the chief stress was laid upon such a dexterity in drill, that no matter in what direction or what circumstances an attack threatened, a front could be at once formed to meet it, either by simply forming into line or by extending. Their smartness and celerity in these movements was extraordinary, and could only be obtained by dint of continuous practice of the officers in actually leading their men. It was that kind of instinctive obedience that defies description on paper—a wave of the sword in the required direction and the whole body would extend or form on the new line like a first-rate pack of hounds settling down after a check.

The point they had completely realised was, that the power of command is a personal sympathy between a leader and his men, like the control of a great conductor over his own orchestra, and this power cannot be acquired without constant practice of the whole team together. Every unit had to bear the impress of its commander's personality on it, a very different thing to merely rendering mechanical obedience to a certain routine of commands.

I confess I have never seen such drill elsewhere, though the Austrians approach very near to it; and when I read the late M. Bloch's denunciations of the mechanical obedience exacted from the Prussian soldier, brutalising and degrading a man, turning him into an automaton, and so forth, I felt quite certain that M. Bloch knew nothing about the matter he dealt with.

M. Bloch does not seem to have been aware that from the day the war of 1866 ceased, both Prussians and Austrians set to work to determine a method which, whilst still keeping the soldier susceptible of direction by the will of his superior, should at the same time develop his individuality and initiative to the utmost, and that a prolonged controversy broke out as to whether "drill" or "education" were the better method, both parties, as usual, liberally distorting each other's views. Ultimately the Archduke

Johann wrote a pamphlet, with the title, 'Drill or Education,' and sent a copy to the old Emperor William, who passed it on to Bronsart von Schellendorf with the note, "Read this, it is excellent ; and you will see I have already made my comments on it ;" and looking closer at the title-page, von Schellendorf saw that the Emperor had struck out the word "or" and substituted "and," so that it read 'Drill *and* Education,' thus summing up the whole question.

It may be as well here to summarise the whole history of this matter, so as to make it clear that whenever a man writes about the brutalising tendency of modern military training he *ipso facto* proves himself incompetent, through ignorance, bias, or both, to express an opinion on the subject.

In the old pre-Jena days the captains of Companies or Squadrons were what in the majority of British regiments five * years ago they still continued to be, and for precisely the same reasons.

Still further back in the history of the German Army, the same system as that to which we originally owed our purchase system was still in vogue. The captain either recruited and brought his company complete in men, receiving the patent of rank in exchange, or else, being selected by the "inhaber," or proprietor of the regiment for the purpose, he was given a sum of money with which to raise and equip a certain number of men. This done, he became the "Company Father," responsible for everything relating to his command, and it was certainly not to his interest to degrade or brutalise his men.

But, as the evolution of fire-power led to the substitution of the line formations and the battalion as unit, instead of the old deep formations, the company commander lost his tactical importance, and became only an administrative official. To render the new movements of the battalion possible the companies had to be "equalised" on parade, and lost their independence completely ; indeed, they even lost their names, the battalions being divided into eight divisions only, whatever the number of companies ; and the captains' sole duty was limited to the giving of words of commands, all responsibilities remaining in the hands of the battalion commanders. At the same time, once the regiments were raised, they were recruited regimentally, and not by companies, and the recruits, few in number in peace time under the long-service system, were trained by specialists—the adjutant and sergeant-major—and in consequence the captains, being no longer responsible for the fighting training of their men, soon lost the knowledge necessary for imparting it.

* Written in 1901.

But with the introduction of short service in the Prussian Army after 1806, the number of recruits which had annually to be drilled vastly exceeded the powers of the existing Staff, and—partly also as a consequence of the number of small detachments and garrisons—they had to be handed over to their captains to be drilled and trained. Further, with the abolition of the “Line” the company again became a distinct tactical unit. This compelled the captains to learn their work thoroughly, for you cannot teach what you do not know, and the Prussian officers had been at work under this pressure for nearly sixty years when the Austro-Prussian War of 1866 broke out, though, it is true, the pressure had not been high until the accession of King William and Moltke to power. Hence, though in the main the system of drilling men in the mass still ruled in the Prussian Army, yet the idea of individual training had made great progress, and when on the battlefield all higher organisations were disintegrated by fire; the great majority of the captains, trained for years to assume responsibility, did so at once without any great friction, and when the two campaigns were at an end there were hundreds who had studied the subject of military training practically, and who knew exactly where the difficulties lay, and being allowed a comparatively free hand, they at once supplied the solution how to combine the discipline of closed bodies with the necessities of individual fighting by introducing into their companies the system of individual education of the soldier.

Their reasoning briefly was this: discipline is the product of a number of factors—obedience, intelligence, emulation, patriotism, honour, and so forth. Obedience under compulsion utterly failed in 1806, but the other factors can only be felt by cultivated minds; therefore we must cultivate the mind. This was the rough conception, and soon it graduated down into the conviction that each one felt, even if he could not express it on paper in words—but he learnt it as a practical fact in front of his troops—that discipline is the resultant will-power of many minds acting in the same direction; the more united the thought and the greater the concentration of will in the individual, the greater this power becomes. Therefore, again, we must educate the minds of the individuals to appreciate facts alike, and at the same time train the power of concentration by exacting the performance of every order “with the complete exertion of body and mind.” It is not enough that an order should be obeyed, *how* it is obeyed is the real consideration.

As a fact, every good drill in every Army has known and realised the necessity for instantaneous obedience for centuries;

it is the scientific justification of "smartness." No practical soldier ever supposed for a moment that the wall-like precision of a march past, or the lightning-like flash with which the battalion shouldered arms together, had anything to do with theoretical tactics, but he did know that these things were the outward and visible signs of the inward and spiritual grace which alone rendered the execution of practical tactics on the battlefield possible. What he did not know, and what to this day no nation has so thoroughly realised as the Germans, was that mechanical obedience alone would not suffice, but must be combined with the higher education of the man himself.

It is worth while now to contrast for a moment the conditions against which we have had to fight in England, and which have for so long prevented the same rate of progress as in Germany. The system of the old Light Division, originally introduced by Lieut.-Colonel Kenneth Mackenzie (of the 52nd), and sanctioned by Sir John Moore in 1803, when he commanded at Shorncliffe, was essentially the same as that of the modern Germans; that of the Line, at the same date, resembled more nearly that of the Prussians, having been more or less intelligently copied from them by Sir David Dundas, the author of the celebrated 'Eighteen Manœuvres.' Under the former system the Light Division became the most perfect all-round troops in Europe. They could skirmish and close for a line attack equally well according to circumstances, and the secret of their success is contained in the following extract from a General Order published by Lieut.-General Sir Sanford Whittingham, on the occasion of an inspection of the 52nd in the Barbadoes, January 10, 1839. After expressing his complete satisfaction, particularly with "the long advance in line and subsequent charge," and referring to Sir John Moore's original interest in the regiment, he goes on to say—

"But there is another part of the organisation of the 52nd Regiment to which the lieut.-general is anxious to call the attention of all the regiments under his charge.

"It is impossible for any commanding officer to carry on *efficiently* the command of the regiment, unless aided and assisted by that class of officers who have ever, in all well-organised armies, formed the basis upon which all military Discipline must rest.

"The captains of companies are the responsible agents to the commanding officer for the different portions or divisions of which a battalion is composed. *But in order to ensure their cordial co-operation in the wishes as well as the orders of their chief, a certain and due proportion of power must be delegated to them, and*

the non-commissioned officers and men of their respective companies must be accustomed to consider their captain, under the superior authority of the commanding officer, as the distributor of all minor rewards and punishments."

This order sufficiently shows that this delegation of authority was not common in 1839 in "Line Regiments," and the reason why is worth elucidation.

The proportion of officers to men was practically identical in both branches of the Service, and in war time circumstances always compelled the devolution of authority to the captains—the work was too heavy for the colonel and sergeant-major to master alone. But with the return of peace in long-service Armies, the task of maintaining routine discipline sank to such modest dimensions that the colonel, adjutant, and sergeant-major could maintain even a superior standard of uniformity in the regiment without the aid of the captains and subalterns, who were so many fifth wheels in a coach, and hampered rather than assisted the work. They accordingly met with no encouragement to master their duties, and in compliance with the dictates of common-sense and human nature took as much leave as they could get.

In the Light Infantry the company remained the unit of field operations, and hence the presence of the officers could not so easily be dispensed with, neither, as they had a real pride in the efficiency of their companies, were they so eager to leave them.

Promotion also was very slow in the days before five-year appointments, and hence the bulk of the regimental officers grew up in compulsory idleness and inefficiency, from which the more active and energetic revolted and sought escape, either by the ladder of Staff employ or by retirement; for there comes a time in every one's life when the inspection of raw meat dinners and latrines fails to satisfy one's ambitions. •

The system thus degenerated into one of the elimination of the fittest, and when at last, by the death or retirement of the commanding officer, responsibility fell upon a man satisfied entirely with the routine of existence, and in whom the faculty of taking responsibility had withered through sheer want of nourishment, he proved unequal to the task, and had to find a smart adjutant to help him. Then the regiment descended to the lowest depths of all, an adjutant and sergeant-major's regiment, and the last state was worse than the first.

That this statement contains no exaggeration will be evident to all who will take the trouble to look up the biographies of our more or less successful Infantry and Cavalry generals from 1820 onwards. Everywhere one finds the same craving to get away

from the monotony of the regiment, and if the results on the whole were not so disastrous as in the case of the Prussians at Jena, our constant series of small wars all over the world furnish sufficient explanation; but it is only the men who achieved some degree of success in their career whose lives furnish occupation for biographers, and of the thousands who were driven by sheer *ennui* to leave the Army, or whose blunders made more difficult the successes of the fortunate few, history retains no recollection.

It is only when this sequence of facts has been grasped and appreciated at its full value that we can understand the absolute want of grasp and power shown by the Infantry at large in their appreciation of the evidence furnished them by the events of the 1866 and 1870 campaigns, and their failure to perceive the true trend of events and the value of our own tactical system. Our Light Infantry as a body rose to the situation at once, and riding with German visitors at Aldershot and elsewhere, I frequently heard them unreservedly praised, as they indeed deserved; but with the others it was a different story, and though many of the young officers saw clearly and well where their errors lay, they were powerless against the centralisation of the adjutant and sergeant-major *régime*.

With the advent of short service, and the linked battalion system, the pressure of recruit training became altogether too great for the existing machinery, and the recruits were passed on to the companies to have their education completed, and then the evils of the old system made themselves fully apparent; for the captains and subalterns, never having been taught their work, of necessity did not know what to teach, or how to set about it.

To meet this difficulty, garrison classes and examinations for promotion were introduced; but again the garrison instructors had no previous experience, and, owing to the neglect of all tactical study during the previous thirty years and more, there was no material available for them to work up into a useful form. Each man had to do the best he could with the resources around him, which varied with his proximity to a military library, and in a short time a number of text-books made their appearance, of which all that can be said is, that, out of the data available at the time, the abler the writer the worse the book was bound to be. This is well shown in the late Col. Home's 'Précis of Tactics.' No one who has studied this book can fail to be struck by the conspicuous ability of the writer, and as long as he is dealing with events previous to the breech-loader era, his work is an admirable logical evolution from the evidence of his authorities; but once the date of 1866 to 1870 is past, and, though the ability remains

equal, he is evidently under the influence of the prejudices of his contemporaries—as, indeed, who was not—and the whole work winds up in a prodigious “non sequitur.”

The real fact of the matter was, that at that period, and down almost to the present day, the material on which alone a scientific study of tactics is possible was hidden everywhere in continental archives, and only within the last ten years have the researches of the Austrian, Prussian, and French General Staffs disinterred the data actually necessary for this purpose, and even now the published facts are still inadequate, though more are known to be on their way to us.

We have all alike been suffering from the lethargy of the great peace after Waterloo. What was wanted from the first in every country was the institution of Military History sections of the General Staff, which would have studied, tabulated, and recorded results whilst it was still possible to check them by eye-witness testimony; but the interests of economy kept these bureaus in a state of abeyance, and how many thousands of lives and millions of money have been squandered as a consequence.

Within a very few years of 1870 a Prussian company could accomplish anything in the way of drill that could in reason be demanded of it. The problem then arose how to employ these companies to the best advantage in battalions, brigades, and divisions.

The battalion question was soon settled. The four companies being given their objective, learnt by practice to work together, like the members of a first-rate polo team. The whole spirit of the idea being embodied in a sentence in the Regulations of 1890, which laid down that at manœuvres the sound “stand fast” must find every company and section in its proper position relative to the others, whether specific orders had been received or not; that is to say, that if a captain or subaltern had to be shouted at all the time he was not fit for the regimental team. And once the idea caught on, the effect was extraordinary; the battalion fought like a living organism. But with the higher units the matter was not so simple, and presently a new split arose.

One party argued for the entire conduct of the fight by means of “instructions,” not “orders.” Each unit in succession was to be informed of the object of the operation and the data available, and was then to execute his share of it on his own responsibility. Von Scherff, in his ‘Reglementarische Studien,’ disposed of this in a masterly manner by taking the classic case of St. Privat and following the units in succession, the corps being formed on the road away beyond Auboué. The corps commander having

instructed his Artillery, sends for the division commanders, and informs them that, in accordance with the general situation, he will attack the enemy, 1st Division to lead, 2nd Division in reserve. The commander of No. 1 Division now sends for the brigadiers, and after recapitulating the information received, announces his intention of attacking, 1st Brigade leading ; and so it goes on till we arrive at the lance-corporal in charge of the "point," who also divides his four men into two parts, and, with a firing line of two men and a reserve of two more, marches to the assault of the French Army.

This, of course, is pushing logic too far, but the difficulty is to find a logical halting-place, and Scherff advocated the recognition of a normal rendezvous formation to be employed whenever possible, to ensure that the troops should be able to enter into action with their full fire-power on a broad front under superior direction as to width—in fact, the recognition of the old "Line" principle—and in this he was followed by Malachowski.

His chief opponent was von Schlichting, who entirely denied the possibility of "command in width," and wished to see it broken into strips "by depth," and apparently the latest regulations are all in his favour ; but in practice considerable latitude still prevails, and certainly by far the best manœuvres I have seen have been executed on the former's plan, not on von Schlichting's.*

The point turns partly on the nature of the ground as giving cover for masses, but mainly on the view we take of the intensity of modern fire to be faced. Von Schlichting is a believer in the "unprecedented" hail of bullets, etc., but as I have repeatedly shown that no such "unprecedented" hail either does or can exist with modern weapons, until we can solve the problem of the issue and distribution of some five tons of ammunition a minute to each battalion in the fighting line, I incline strongly to von Scherff's opinion, and can see no more difficulty in handling twenty battalions in line nowadays than there was when the slaughter and confusion of the fight was far greater.

Still the conflict of principle must exist, as long as we make no hard and fast distinction between skirmishing and attack, and the best solution, to my mind, will be found in a frank return to the principles of the "Light Division" and the "Line," the former to cover all deployments of the latter ; and as I proceed I hope to make the arguments in favour of this view materially stronger.

Meanwhile progress in the Artillery had again completely revolutionised the relations between Infantry and Artillery fire.

* See a description of a battle, corps against corps, near Muhlhausen, in 1891, in my notes on Cavalry Evolution, U. S. M., June, 1901.—AUTHOR.

In spite of the mechanical improvements in the rifle, the practical increment in the rate of fire remained but trivial, because, however quickly a man may load, he cannot take reliable aim any quicker now than formerly, and, indeed, at the longer ranges of the present day he needs more time than he did formerly, and four to six rounds a minute, according to the quality of the troops, remains about the best rate for accuracy for modern European Infantries.

The Artillery have throughout maintained their superiority in range, and, in addition, by the universal introduction of shrapnel, and by the methodical practice of "ranging," have increased both their accuracy and the number of projectiles thrown per minute in an enormous ratio.

Few who recall Prince Hohenlohe's account of the fire of those of his batteries which had been taught systematic ranging in the School of Gunnery before 1870 can question that a trained battery was equal to four ordinary ones, and with shrapnel which gave 200 bullets a round against, at most, 20 man-killing fragments from common shell, the combined gain was about forty-fold what it had previously been. The Germans, however, had not taken kindly or all at once to the new projectile; they had encountered fuse difficulties like other nations, and had retained a strong predilection for the "double walled" shell (an improved and simplified segment), and clung rather to the idea, favoured by their 1870 experiences, of demoralisation of the enemy by prolonged Artillery preparation, a tendency which exercised a far-reaching influence on all time calculations for movements of the reserves in cases of defence and distances on the line of march of successive units.

It was the French who were first to grasp the full possibilities that shrapnel * offered—a natural consequence of their old Artillery case shot traditions, and this explains their anxiety, even at a considerable cost of ballistic power, to go over to the Quick Firers. For, great as are the powers of shrapnel from a single loader, they are still behind what the old case of the early years of the last century could accomplish at its own range.

The bores of the 4 and 6-pr. S.B. guns were identical with those of the 9 and 15-pr. B.L. weapons, but the case held nearly 20 per cent. more bullets than the shrapnel, and there was no question of accurate relaying with case fire, which could be kept up, if necessary, at the rate of eight rounds at least a minute.

* As we were the first to adopt shrapnel as sole projectile, this requires a word of explanation. The full possibilities of the projectile may have been apparent to our gunners, but our regulations and practice show no signs that our generals saw all the consequences that must follow.—AUTHOR.

But the new French Q.-F. guns claim, as I have before pointed out, a rate of 90 battery rounds a minute without relaying, which puts them quite on a par with the old guns at a range outside the serious influence of Infantry (say 3000 yards), and hence it has become possible to drop the original idea of Artillery preparation by slow degradation of "moral," and go in for maintaining in "gusts" such a storm of shrapnel on the enemy's trenches that accurate aiming will be no longer possible.

Then, as against the unaimed fire, which alone has to be reckoned with, the question of formations drops out altogether, and the moment the Infantry are ready, formed for attack, they can go forward simultaneously as the guns open fire, reaching the enemy's position and storming it before his reinforcements, which have received no previous warning of the point of attack (as would have been the case with the old common-shell method), have time to anticipate them.

But frightening the enemy is, after all, not the same thing as killing him outright, and the consequence will be that, whereas formerly the strength of both sides was exhausted in the struggle for the line of the position itself, now it will be fought out on comparatively even terms within the position itself, and for this purpose masses of Infantry, in closed bodies, must be at hand for immediate action, which may come from any and every quarter, and will probably be preceded by a succession of furious Cavalry charges, as in the old days. This is the explanation of the heavy masses of French Infantry not unfrequently seen at their great manœuvres, and which have attracted the unfavourable comments of our newspaper men. But the reason for them is perfectly clear if they would only take the trouble to understand their subject before dashing into print. Thus, in 1891, I was present at an engagement between two corps on either side, fought across a great valley, with heights running up to 2000 feet, about five miles apart, near Bar-sur-Aube. I was with a party of five Englishmen, one a well-known correspondent, and our side was attacking. From where we stood the opposite slope of the mountain looked a perfect glacis, certainly two miles in extent; but trained eyes, even without the assistance of the contours of the map, could easily detect a strong convexity, which made all but the last half-mile a dead angle to the defenders.

Under cover of a tremendous line of guns, in which, by the way, the "120 mm. court" howitzer of the Dreyfus trial made its first appearance, a whole corps of Infantry formed up in the hollow and commenced to assail the heights, a whole division forming the attack proper with skirmishers, supports, and reserves, all the

latter in successive deployed lines, and behind, the whole of the other division as a closed reserve, in what appeared to be two lines of quarter-columns at close interval, with the two Cavalry regiments and some batteries a little in echelon to the right.

It seemed a case of Macdonald's column of Wagram over again ; but reflection, which, by the way, we did not at the moment bestow upon it, has since convinced me that it was a perfect formation for its purpose, for the leading division had got into the enemy's position before this closed mass became exposed to anything but unaimed fire, and, of course, no grouping of the men could in any way have affected its losses, except in so far that had the distances been greater the column would have been deeper, and consequently the mean time of exposure considerably greater. Actually the fight was broken off the next moment, so no use was made of this immense mass of men ; but a few days later, at the battle of Vandœuvre, I saw the kind of opportunity for which they were meant, and learnt a useful lesson in tactics ; for, reaching the crest of the enemy's position at its exact centre while a fight was raging on either flank, I saw beneath me the two opposing corps, each hurrying up its reinforcements, and in so doing opening up a wide gap at their line of junction. This tendency to close on the centre would, of course, have been far more marked in real war than in manœuvres ; but even in this case the gap amounted to nearly a mile, and not a single soul was on the look-out to guard it. Not 3000 yards away stood a whole Cavalry Division, and twenty minutes would have sufficed to hurl the whole mass upon either of the two corps below me on its inner flank—the ground was good going, and the approach completely hidden. What such a surprise would have entailed against European conscripts I leave the reader to imagine. What Vlaksfontein cost our seasoned troops will give a good general idea, though the Boers halted to fire and did not ride home with the lance. The one great lesson I carried home with me that year from both France and Germany was, that troops trained only to formal attacks, either frontal or flank, and not *drilled* to meet an enemy, either horse or foot, at any moment from any direction, *i.e.*, not absolutely in the hands of their leaders, would be utterly useless from the general officer's point of view ; and this was sufficient explanation to me of the extreme importance the generals of both countries had always attached to absolute precision and celerity in close-order changes of front with immediate opening of fire. No one can tell in the climax of a great battle from what quarter danger may next affront one—here a body of the enemy has penetrated the line and comes suddenly out of a hollow, and on the flank of

one's own reinforcements advancing to a counter attack ; there a squadron of Cavalry cut off from its main body comes galloping down from the rear. The permutations and combinations literally defy analysis. One other point in these manœuvres deserves recording. The ground was classic. There has been fighting there since the history of France began, and there will be again. There were 100,000 men on the ground, and they used smokeless powder ; but the reconnaissance difficulties were but slight. Even without the aid of the graze of the bullets to give a line, it was impossible for the troops to take up a position for defence without being themselves exposed to sight. One fatal thing (next, of course, to the officer of Infantry on a white horse, who will not be suppressed in any Army) was the movement of the French red legs, that always, even at great distances, gave them away, when the Marines and Chasseurs, on the same level, were quite inconspicuous. Our red bodies and dark legs, on the contrary, against similar backgrounds, would have been quite inconspicuous, but khaki against the heavy pine forests would have been everywhere visible.

CHAPTER VIII.

Resumé of argument—Colenso and the Modder River—Press attacks on regular officers—
'Scenes in London during Colenso week—Losses no new thing in war—Our attacks
no survival of mediæval chivalry—References to German adverse criticism—Artillery
not present in sufficient strength to achieve "preparation"—Concave slopes of the
ground in Africa—Concealment of masses impossible for us, hence outflanking
Infantry movements impracticable—Extreme extensions—Advantages of the Boers
over Europeans—Their marksmanship—Slow scoring against good targets—Boer
mobility—Their policy of retirements—All this impracticable in Europe—Suppose
the Boers deprived of their mobility—The consequences for us—The "Defenders'
Dilemma"—Defence of our chalk escarpments—Attack formations—The two discip-
lines—Calculations to prove its superiority—"Time" on the battlefield—Continental
experiments with shrapnel against line targets—Extended order in the supporting
lines.

IN the previous chapter I have endeavoured to sketch out the action of the many causes which, during the last two centuries, have led to the evolution of tactics in the form in which we now find them. There are many minor points of great interest, but not sufficiently to the point at the present moment, which want of space has prevented me from noticing. All that I am concerned with is to make it perfectly clear that, had the fortune of war led troops of any other nation in Europe in equal numbers to the attack of the Boer positions during the early portion of the war, they would have acted precisely as we acted, and with neither more nor less success.

At Colenso, it being granted that an advance was then and there desirable, the information at our disposal * would have led to a similar attempt. Their orders might, indeed, have been more concisely drafted, but the result could only have been the same unless indeed their Infantry possess some means of flying across unfordable rivers absolutely unknown to us.

At the Modder it would have been again the same—tired-out Cavalry horses, under the same weights, would have scouted no better than ours—and probably only the French, relying on their Q.-F. shrapnel fire to envelop the enemy in artificial darkness, would have rejected the dawn-of-day (not the night) attack at Magersfontein. The only difference would have been that both

* Written in 1901, before full accounts were available.

troops and nation would have taken these repulses as all in the day's work, and no ignorant journalist would have been allowed to air his views to the contrary, because, nation and Army being one in spirit, training, and feeling, any editor who had ventured to attack the leaders would have had to call in the police for his personal protection.

That the Press should have attacked the officers in our Army was only to be expected, as a necessary consequence of the military ignorance that for so long has prevailed amongst us, but that these attacks should have been encouraged, and indeed fomented, by the outrageous letters communicated by retired officers, is a bitter scandal indeed. I shall never forget the scene during the Colenso week in many of the London military clubs; the abuse of the generals, who before had been their idols, and the lying rumours as to the personal bearing of individuals which were being circulated, convinced me once and for all that whatever long service might have done for the men, its effects had been disastrous on the officers. All sense of proportion was lost, in face of these few almost insignificant repulses, which in a great war would have been exceeded in magnitude many times in a single day; not one word of commendation was to be heard for the brilliant gallantry and staunchness combined which had carried Talana Hill, Elands-laagte, Belmont, and Graspan; even these victories were made a store of offence against the generals because they had not succeeded in winning them as cheaply as we sometimes, but only sometimes, have won them against half-armed Asiatic rabbles.

At the time I searched diligently through the statistics of losses of many campaigns, and failed entirely to find any cases in which equal results had been obtained at so low a cost between well-bred white races equally well armed and equally determined.*

That single battalions should lose nearly all their officers is no new thing in any Army, neither that men should be hit again and again in the execution of their duty either—one has only to look at the struggles that have raged round our regimental colours in the days before it was the custom to seclude them in the baggage waggons to find many similar records of devoted gallantry—but for troops to march coolly up to the enemy's muzzles, extended at four paces interval, like the Marines at Enslin and the Guards at

* It may be of interest to the future historian to know that, though I did my utmost to check this flow of misrepresentation by letters to the Press, these letters were almost uniformly rejected, even by editors to whom my qualifications to speak on the subject were well known, and had been previously admitted.—AUTHOR.

Belmont, are instances for which we may search military history in vain.

I venture entirely to disagree with the popular notion that these attacks were mere survivals of mediæval chivalry ; to hold this view is to mistake the whole spirit of warfare, whether modern or archaic. War has always been a test of ultimate courage and endurance, and though it suits the purposes of the other side to laugh at our apparent folly now, I suggest that the burghers who at all these places witnessed their powerlessness to stop our advances when not assisted by the ground, held very different opinions the morning following their encounters.

There was not a soldier in England, I venture to affirm, who had really studied the possibilities of a Boer campaign, who was not aware of the terrible risks to which the few troops on the spot, when the first shots were fired, were exposed. It was known that they were many times outnumbered by a far more mobile enemy, and the only chance our people had was to strike hard and fast wherever the opportunity offered. The distribution of the troops was entirely governed by political considerations, as it always is, and must be, in similar circumstances, and actually since we had not means enough to win a decisive victory, *i.e.* to fight a "battle," in its strict technical meaning, it became almost immaterial when and where we fought them, provided that on that ground we beat our immediate opponents. I sometimes wonder whether any of our many critics ever studied Sir John Jones's instructions for the commander of a fortress threatened with investment. Ladysmith was our fortress, and Talana Hill, Elands-laagte, and Rietfontein fulfilled in the spirit identically Sir John Jones's requirements.

If space permitted, I should like to dwell at length on the strategy of this part of the campaign, and more especially on the errors of our German critics, Hoenig and von Schlichting, to say nothing of less well-known authorities, amongst whom I may class the Austrian Field-Marshal, with whose record I do not seem familiar ; but I must confine myself to the prediction that some day even the British public will realise that in Penn Symons we lost a thorough soldier of exceptional promise, and that any nation might be proud of two such generals as Sir John French and Sir George White.

Some points, however, in the tactics of the whole of the above-mentioned actions deserve special attention if the full significance of each is to be realised. When dealing with the procedure of attack generally not only is it always assumed that the relative proportions of the three Arms and their rate of movement is substantially the same, but that the numbers concerned are at least

equal to those of an Army Corps on either side—no one in Europe proposes to fight with detachments unsupported—but with these large bodies the matter is simplified, for their numbers suffice for adequate concentration of Infantry and guns upon the decisive point, and the extent of front and depth of area over which the preparatory movements are made admit of this concentration taking place more or less as a surprise to the other party. But in Natal and the north of Cape Colony this was not the case. Symons could not mass more than two batteries, because he had not more than two to mass. But what is the fire of two batteries against the twenty or more with which the tacticians usually deal? And similarly in all the earlier encounters, the preparatory fire of Artillery on which we all rely could hardly be said to exist at all; but from what it did do, in the way of unsteady the enemy's aim, we can gather how excellent our batteries really were, and form some conception of what all Infantries will have to face in the future.

Again, the slopes of the ground over which we attacked throughout all Natal are almost uniformly concave; hence, at whatever contour the Boer elected to stand, he had an unbroken field of fire, without dead angles in front of him; and a single brigade or division had no power of initiating a turning movement, even had such a thing against the more mobile Boer been in itself desirable. But in Europe these concave slopes are almost entirely absent, except in Italy and here and there in the southern volcanic districts of France. Generally, wherever the great ice-cap once rested, and over all chalk and jurassic formations, the concave slope is the rule, and these almost always compel the defender to come well down the outer slopes of his position in order to get any field of fire at all.

I have followed the track of Napoleon's Armies almost all over Europe west of the Vistula, and am well acquainted with the topography of my own country, but I cannot call to mind even three positions in which a "battle"—not a skirmish or combat—could be fought in which the defender would derive the same advantage as the Boers from the shape of the ground.

But our Army must be trained primarily on European lines. If it is considered by our possible enemies that on their own ground we are likely to prove formidable antagonists, we have the best practicable guarantee for the maintenance of peace, and this guarantee will be worth more to us in the long run than the power of beating some small Colonial levies in a part of the world in which sea-power will always have time to make itself felt. The week of Colenso exercised no appreciable effect on our diplomatic position; what would be the result of a single defeat between

London and the sea? Thanks to this characteristic section of the ground in Natal, the concealed massing of troops against the enemy's position, the very essence of modern tactical generalship, was rendered impossible for us, and the movement of any detachment was revealed to our opponents from the very first, so that they could act against us up to the extreme range of the rifle.

The suggestion of outflanking movements under these circumstances ought in itself to suffice to discredit those of our critics who made them, for even a European enemy with Infantry could always detect them in time enough to form a new front to meet us; but as against the Boers, who could move ten miles in an hour easily to our three, the idea was ridiculous until our numbers began to exceed theirs in a similar proportion, or the arrival of our mounted men placed us more on an equality with them in rapid movement.

Neither in this early stage of the war, would it have been safe to risk the wide extensions at ten paces and upwards to which we subsequently resorted, for there was nothing in the information we possessed as to the tactics of the Boers at the time to justify the assumption that they were prepared to forego the advantages for rapid concentration for a counter-attack which their mobility conferred on them.

So that it all comes to this: that our troops were placed in a position, by circumstances beyond their control, in which, in the interests of the Empire, they were bound to fight, and sacrifice themselves, if necessary, to gain time and impose respect; and under these conditions, which deprived them of all the advantages usually belonging to the offensive, they nevertheless attacked in formations well suited to the purpose, and inflicted on the enemy a series of defeats which, given an adequate Cavalry force for pursuit, might easily have proved decisive for the whole of the war, and that they paid for their successes the lowest price in killed and wounded ever yet recorded between equally well-armed forces of fighting races.

Even against the conscript Armies of Europe such a result would have been remarkable enough, and we may well ask our German and Austrian critics how they would have felt had they been compelled to take over the defence of an equal length of the Prusso-Austrian frontier with some half-dozen regiments of Infantry and the same number of batteries against some 50,000 Russian Mounted Infantry? The Boers are men whose individual intelligence for this special type of warfare exceeds by far anything that can possibly be taught to the civilised raw material of European

ances, and their skill with the rifle is precisely of that nature which finds its greatest scope in fighting of this description; therefore the results we obtained in the first three months of the fighting deserve far higher recognition than has yet been accorded them.

This question of Boer marksmanship deserves closer dissection than it has yet received. It is probable that the younger men were markedly inferior to their predecessors; few men ever do obtain a "sporting" mastery with the rifle under thirty years of age, but the older men were still there in very considerable proportion—fully 25 per cent.—and of them it is fairly certain that most were better judges of distance and better shots at running game than any men in the ranks of our Army could by any possibility have become, and could only be equalled by a few of our officers, whose love of sport has led them into every country under the sun. That these men should have been particularly deadly in picking off scouts was only to be expected, and accounts for the difficulty we experienced in our reconnaissances. Equally they found good opportunities for snap-shooting at our officers leading the attacks, though, as a fact, the mortality amongst these was often equalled in the days of Brown Bess. Even among the younger men there must have been few indeed who could not, whilst loading, keep their eyes fixed on their object, the first essential of all good field-shooting, and above all, thanks to the want of military discipline throughout the whole of the levies, there were no men in the fighting-line who did not wish to be there.

If, in spite of all these advantages, the scoring was about the slowest on record as between brave men, the inference in favour of my contention that individual skill with the rifle counts for very little in decisive fighting would be strong indeed.

But we have not exhausted the inquiry yet. There remains still the influence of Boer mobility to be considered, and this seems the best place to sum up all the indications on this point I have already given, both in previous chapters of this series, and in 'Cavalry: its Past and Future.'

Given the power of rapid movement in a friendly country, with an indefinitely large area to manœuvre in, lines of communication lose almost all their normal significance, and the choice of the line of front to be assumed against the enemy becomes a matter of convenience, not of iron necessity.

Again, since there is nothing, in the absence of lines of communications, to be gained by holding a position to the bitter end, it is altogether superfluous to consider the questions of supports

and reserves (as we shall presently see, the great stumbling-block of modern defensive tactics). If the enemy comes on determined not to be denied, all that is necessary is to mount and ride away to take up a fresh position on a new front relative to that of the adversary.

Hence it becomes possible, with a few men, to hold a front of abnormal extent, and on any given area it is obviously easier to find cover for, say, 500 men to a mile than for 10,000.

In ordinary European warfare, there being no marked disparity between the shooting of either side, the outposts can be driven in by superior numbers whenever the opposing general pleases, and once they have rallied on their main body, it is very seldom indeed that the latter can find adequate concealment against the trained eyes of Staff-officers.

I do not suggest that it is nowadays possible to ride out and check off every individual battalion and gun as in the days of Marlborough, but I am convinced that, with the hints furnished by the strength of the outposts, the uniforms on the corpses, and the many other indications it is impossible to conceal, a well-trained officer will seldom be in doubt of the nature of the units in front of him, and by his *ordre de bataille*, which should be in his pocket-book, he can have no special difficulty in arriving at its probable strength and constitution; but there was no *ordre de bataille* of the Boer Army, and no distinguishing uniforms, hence many of our difficulties.

Obviously 20,000 men can hold a far longer front at the rate of 500 men to the mile than at the rate of 5000, and the difficulty of the assailant in finding out where the flanks rest is proportionately increased, whilst, in the absence of definite lines of communication, it is useless to pierce the centre—that may, in fact, defeat one's own ends—which can only be attained by the process of rounding-up the enemy, a process itself dependent on superior mobility of a part at least of the attacking Army, and herein we find abundant justification for the form our tactics in South Africa ultimately assumed. It was not the game for the Boers to attack at this stage of the proceedings, and hence it was safe for us to adopt the extraordinary degree of dispersion in which we indulged, but I suggest that it was a mistake on the part of the censors to allow the idea to get abroad that this extension was sanctioned as a means towards diminishing losses, whereas, of course, in decisive fighting it must have had a precisely opposite effect, as I propose presently to prove.

Now, suppose the Boers suddenly deprived of their mobility and reduced to the same rate of movement as ordinary Infantry.

Then, since their original rate of extension at Talana Hill, Elands-laagte, etc., did not suffice to keep out the British troops when they meant coming on, they would have had to diminish their front very considerably ; but, in proportion as they increased the density of their formations, they would have encountered the usual difficulties of concealment, and their casualty rate would have risen proportionately. Moreover, the prospect of having their lines pierced and their trains captured would have proved very unattractive, especially after the taste of our lances they experienced at Elands-laagte, and thus, step by step, they would have been driven back to the ordinary fighting-line, supports, and reserves of conventional tactics, and then their real difficulties would have commenced in earnest.

To hold a position, it is essential that your gunners should be protected from the true skirmishing fire of the assailants ; and picked marksmen, as we know, can make it very disturbing to such targets as a gun detachment at considerable ranges—say at 1500 yards.

To keep these skirmishers back, an Infantry force is required from 600 to 800 yards in advance of the guns, down the slope of the position towards the enemy. But the guns may be beaten and compelled to withdraw, and how are supports to reach the advanced line, or are they to be withdrawn too to the crest of the position ? In the latter case, what is likely to become of them retiring up the glacier-like slope of the chosen position pursued by the shrapnel of the victorious gunners and the volleys of the Infantry ? In the former, what is the outlook for men advancing down the exposed and, by hypothesis, open slope towards the enemy ? Is it to be supposed that covered trench communications, zigzagged sufficiently to prevent enfilade, can be constructed by the labour available in the midst of a marching campaign ? I do not think so. I have examined literally hundreds of miles of alleged impregnable positions during the past twenty years in the south of England, and can find no one place where this would be generally possible, and I would earnestly advise those who prefer to see for themselves in these matters to do as I have done, and try to find a reasonable defensive position, say along the chalk hills from Guildford to Canterbury.

The suggestion of tiers of entrenchments for supports and reserves, as a general rule, is almost equally illusory ; for that entails placing the Infantry so close in front of the guns that they catch all the shots which fall short of the gunners, and are also in considerable danger from premature bursts of their own shell, and if the enemy gets into the first line, then either the supports must

clear their own front by fire, or they will be overrun, and their fire masked by the beaten-out remnants of what was the fighting-line, neither of them pleasant alternatives. But, in any case, any attempt to cut trenches on the exposed slope of any of our chalk downs means the establishment of a great white scar across the face of the hills, a target no gunner would neglect, and which it is practically impossible to conceal.

It is true that there are other means available for the defence of such features of the ground, but at present it would scarcely be wise to disclose them to the public at large, but the ideas above sketched out are the conventional ones, and hold the field. For my part, having thought long and earnestly on the subject, I sincerely trust that wherever the British Army may go, it will elect for the active policy of attack, and never (except locally) for the passive form of defence. "The defensive-offensive," said Clausewitz, sixty years ago, "is the strongest form but the most difficult of execution," and these difficulties have increased enormously since the time he wrote. Then you could only concentrate the fire of some 30 guns on a desired point; now you can converge from 300, and 5000 rifles as well.*

As for the formations in which our attacks should be delivered in the future, I submit that now, as formerly, once the preliminary reconnaissance (which will take far more time than it used to do) has definitely established the enemy's position, the Infantry must go forward in line, two deep, to the attack; first because that formation, now as ever, gives the greatest weight of fire, and hence the best protection; but because also it is by far the most economical method of gaining ground to the front when numbers in excess of mere skirmishing requirements are necessary.

The following calculations will prove my position:—

The successful execution of an attack always has and ever will depend on the previous acquisition of a fire superiority. Let us assume that to acquire such fire superiority it becomes necessary to bring up from cover at least 3000 rifles on a front of 2000 paces (these numbers throughout are taken for convenience of calculation, to avoid fractions), to a point 400 paces to the front across an open glaxis, swept by a uniformly distributed fire, which remains constant for the duration of the movement (a few minutes only), and scores 80 hits a minute on a deployed line. Further, to allow for the great penetration of modern bullets, let it be assumed that every

* Those who care to pursue this subject in greater detail will find it discussed at length in a lecture given by me at the R.U.S. Institution, headed "Attack or Defence," in 1893, and may also be referred to the imaginary fighting about Redhill and Dorking in the 'New Battle of Dorking.' I have seen the mistakes alluded to in that pamphlet committed over and over again in manœuvres in this country.—AUTHOR.

hit in the front rank brings down the rear-rank man as well, and all three in a three-deep formation.

A single-rank line will lose only 80 men a minute, a two-deep line 160, a three-deep line 240.

An extended line, 4 paces between each file, will lose 40, and at 8 paces between each file, only 20.

To cover the whole 2000 paces with a three-deep line requires 6000 men, and in the four minutes required to traverse 400 paces it would lose 960 men, reaching the desired point with 5040 rifles, which would be inconveniently crowded, and lead to unnecessary subsequent losses.

A two-deep line requires only 4000 rifles, and in four minutes would lose 640, and with 3360 rifles in hand, would very closely fulfil the requirements; and being able to beat down the enemy's fire from the first, its subsequent losses would thus rapidly decrease.

Single rank would lose only 320 men out of 2000, but would be 1320 short of the required strength, and require immediate reinforcement.

Assuming, to simplify calculation, that, owing to the state of the crops, the men have to fire standing, then if their support follows only 200 yards behind, two minutes will elapse before their support reaches them with another 1680 men, bringing the total number of rifles up to 3240; for meanwhile the men already on the ground will have lost a further 120 men (*i.e.* the same proportion of 1680 per minute as the original 2000), so that the total loss will have been 760.

With a line extended at four paces interval between the files, 1000 men would be required for the whole front, and would lose 160 men in the first advance. A first reinforcement would bring the total up to 1650 (*i.e.* 840 + 840 - 30). A third reinforcement will give 2410, and a fourth will be needed to bring the whole number up to 3160, showing a total loss of 840 men in eight minutes against 640 and 760 respectively in the former instances.

Proceeding in the same way, 500 men extended eight paces between the files would lose 80 men in the advance, and it would require seven reinforcements (taking 14 minutes) to bring up 3120 men into line. The losses therefore would stand as follows:—line, 640; single rank, 760; 4 paces extension, 840; 8 paces, 880; three-deep line, 960; but the percentages would be, three-deep line, 16; two-deep line, 16; single rank, 18; 4 paces, 21; and 8 paces, 22.

If the distance to be traversed be extended to 600 yards, then by the same method the results work out as follows:—

	Loss.	Percentage.
Three-deep line (6000 men)	1440	24
Two-deep line (4000 men)	960	24
Single rank (requires two reinforcements = 6000 men)	1810	30
Four paces extension (requires five reinforcements = 5000 men in ten minutes)	1470	29
Eight paces extension (requires nine reinforcements = 4500 men in eighteen minutes)	1450	32

For 800 yards the result is still worse for the extended lines, and if we increase the distances between the files to 6 and 10 paces (for attack, not real skirmishing), the advance must of necessity come to a dead-lock, for now the fire to be faced can no longer be assumed to be uniformly distributed, but becomes convergent on each file.

Moreover, all these devices for the economy of life in attack overlook the all-important question of time on the battlefield. Not only is destruction of life going on all over the field whilst any particular attack is in progress, but an immediate decision at any given point may have far-reaching results on the strategy of a whole campaign.

Assume an enemy's corps distant only 1000 yards from a point at which its timely appearance may turn the fortunes of the day, and assume further, which is not strictly the case, that 3120 rifles delivered by driblets in the fighting-line in 15 minutes can accomplish equally completely the work of 3360 delivered on the spot as a whole under the control of their officers. In the latter case the fresh corps on the enemy's side arrives ten minutes too late; in the former, has still five minutes to spare. Or, assume again, that the enemy has taken up a position like that of the IVth French Corps at Mars-la-Tour, with fresh troops, either Cavalry or Infantry, lying hid in a ravine along the front of the position—a plan which is certain to be adopted for defence in the future wherever the ground permits of it—and that, like the Prussians, the troops arriving on their firing position are suddenly exposed to an attack with cold steel. Which has the best prospect of resisting it—the still almost unbroken line, or the straggling echelons of extended individual fighters with only, say, one rifle to four paces to stem the charge?

And is it really nothing nowadays that the line leaves its casualties behind it, whilst the others have to step over their dead and wounded comrades? It used to be considered a serious disadvantage formerly.

As against Artillery fire, the superiority of the line is even more apparent, for shrapnel bullets certainly do not penetrate a

couple of men at a time, and the line therefore has only the same losses as a single rank ; and this point was made the subject of special experiment in both France and Switzerland, and I think Germany, at least ten years ago, with the result that it was conclusively shown that line was far less vulnerable than any combination of similar numbers in small columns and skirmishers. I remember at the time thinking the outlay on these experiments extravagant, for the result could have been arrived at equally well with a box of tin soldiers and a handful of dried peas.

It has always hitherto been an accepted axiom of tactics, based on the experience of generations, that troops in close order will stand heavier punishment without losing their forward momentum than when extended, and in conformity with it we find Napoleon and his marshals sanctioning the employment of ever-increasing masses as the quality of their Infantry deteriorated, which is merely applying the converse of the axiom. It may be an impertinence on my part to suggest it, but I cannot help believing that Napoleon, Ney, Lannes, and even Macdonald, knew more about human nature in battle than the majority of our Press correspondents. Now, a reference to my figures above will show that the advance in extended order, whatever the interval, makes even greater demands on the courage of the men than the close order, which is inverting the Napoleonic practice, and, indeed, the demands are so high, that in all military history I know of no examples in which they have been successfully endured, whereas the line has frequently gone on against almost double the punishment which, according to my figures, it will be called on to bear. In the Franco-German War, it is true that the attacks in skirmishers and small columns invariably lost rather more than the line where it was employed, but this was because the closed bodies behind the extended lines followed very close and drove the others forward, by moral impulse understood. But our modern reformers appear to wish that all our supports should be extended likewise. Can they give one instance in which their suggestion has succeeded ? I know it was occasionally tried in 1870, after Sedan, against an inferior enemy, but no one ever wanted to try it a second time ; and in 1877 by Skobelev, but even he found that the regimental officers raised weighty objections, which he was unable to overcome.

CHAPTER IX.

Practical conclusions for company officers—Increased opportunity the new system offers to the ambitious—Increase in intelligence of recruits—Hence new methods of training desirable—To instruct you must explain—Scherff's opinions—Recruits should know the history of their nation—And be taught that of their own regiments—University Extension scholarships—True discipline, its nature—Collective courage—Object of drill—Instances of disciplined courage—Battlefields cannot be improvised—Creation of discipline in the Army of the Potomac—The 1st Maine Heavy Artillery at Petersburg—The teaching of self-control—For this close order drill is essential—Panics—Object of field training—Nothing is practical that is slovenly—Further drill training gives collective courage—The psychology of the soldier's training—The *Birkenhead*, the *Sarah Sands*, and the *Warren Hastings*—Cowardice in the Army a *crime*—Beaten troops willingly submit to the severest discipline—Discipline pays—Random and aimed fire in action—How fire varies during a battle—Preparation for attack in Frederick the Great's time—In the Napoleonic era—Nowadays—Limitations of a commander's power—Conditions of victory.

IN this chapter I propose to put together some practical conclusions which may be of service to the company and squadron commanders, on whom the responsibility for the efficiency of their units now devolves. I do not anticipate any startling and immediate change as a consequence of the new order of things, for human nature is very slow to alter, and the old routine saved trouble in many ways in everyday peace-time existence, but I am confident that this new power affords opportunities for the coming generation to prepare themselves for a big career such as British officers, except those of the Royal Artillery, have never enjoyed before; and the men who set themselves to work with temper, tact, and judgment to make the most of them will acquire a knowledge of troops and their peculiarities which will render them practically independent of social and political influences. They will become so conspicuously qualified for Staff duties and appointments, that it will be impossible to pass over their merits; for it must be remembered that there is no particular or vicious tendency in the Army to favour social or political claims, every man tries for his own sake to select the best subordinates he can, but when there is no particular way in which an officer can display his special fitness for selection, promotion goes mainly to those who have attracted favourable notice, whatever the cause, just as one's attention is

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instruct you must explain. The Divisional General explains to his two Brigadiers, allotting to each a definite scheme of operations; the Brigadiers, in his part, divide the work to their colonels, and so on down to the platoons and his squad, and in peace-time this is all possible. In war, indeed, necessary to awaken the military intelligence of the men to enable the best men to come to the front. This is impracticable, and just when a man wants to do his share he can get, the whole structure on which he has built crumbles to pieces, and he has to act at once on his own responsibility.

That well-known German military writer, von Scherff, has pointed out, logically the thing is impossible, but he has got to work, and it may be relied upon to do so. Fortunately, man is not altogether a logical being, and his day life is always engaged in reconciling the irreconcilable.

The attitude of the instructor to his men in peace must always be, "I tell you this now, in peace, because there is time, and I am teaching; in war there is no time. I receive orders and obey them unquestioningly because I have confidence in my chief and know that he has cards in his hands which I have not seen, and in turn you must then obey me until I fall, and there is no one left to give you further instructions, then you must act for yourself, each according to his rank, in harmony with the general principles of the whole Army."

In a perfectly organised nation every recruit would join with a clear knowledge of its history and of those few general principles to which it owes its existence, and on which its fighting strength is ultimately based. With us his mind is too often a desolate blank, and we must begin by awakening his interest from the very beginning.

Hitherto we have shamefully neglected our opportunities, for the average recruit is an intelligent lad, most willing and eager for information. As a preparatory step in his training, before he joins his company, I should call in the aid of all the great lecturing societies—the Oxford and Cambridge Extension lecturers, for instance, and especially the Navy League and Colonial agencies.* I would give him a very short course of modern history, founded, where possible, on the part his own regiment played in the making of it, get the Navy League to expound the doctrine of "sea-power," and the Colonial lecturers to expatiate on the new countries our fleets and armies have obtained for us, pointing out the openings they afford to men with a sound soldier's training in all the rough duties of field pioneering. I would approach the county magnates and retired officers, and enlist their sympathies for the institution of University Extension Scholarships, so as to open the door towards self-education for the better-class recruits we might then hope to attract, and on the spirit of interest these aroused, the company training proper might well take its stand.

Within the company itself, over and above the recognised syllabus laid down, the ruling idea must be to inculcate the real meaning and true spirit of "discipline," and this is not as easy as it sounds, because the real conception embodied in the word has been overlaid and corrupted by the use habitually made of it in the popular Press.

In the ordinary civilian mind the picture it usually calls up is one of a nicely turned out, well-behaved regiment, where crime is

* There is nothing whatever to prevent C.O.'s adopting this suggestion—for they now have funds available, and this would be a better employment of them than the purchase of "pushballs, etc.," commented on in a recent Army order.

guarantee of victory the wit of man has as yet been able to conceive.

As instances of what disciplined courage can effect I would cite Fontenoy, Assaye, and Meanee.

The civilian historian or recorder of such events usually explains such feats as these by imagining that each individual man was a quite unusual hero—his heroism being born in him as part of an Englishman's birthright—but, as a matter of fact, he was probably neither more nor less brave when he joined as a recruit than any other member of the same class who measures not less than 33 inches round the chest, and 5 ft. 4 ins. in height. What made the regiments, as regiments, what they proved themselves to be, was the training the regiment itself had undergone; but in these cases the regiments had been almost continuously on active service for years, and the men were accustomed to the sights and terrors of a battlefield.

Battlefields, however, cannot always be provided for the training of troops, and all attempts to introduce ball cartridges into peace manoeuvres have hitherto met with the severest reprobation. We must therefore seek an illustration from the history of troops which have been trained in peace-time and under circumstances as closely analogous to our own as possible; and a series of demonstrations are provided for us by the history of the American Civil War of 1861-64.

When the war began there were only some 20,000 regular soldiers in the whole of North America, and even these were destitute of any training in the habit of marching, camping, and fighting in large bodies. The bulk of the civilians had absolutely no knowledge of military matters whatever, and there were, practically speaking, no text-books even to help their instruction. Everybody expected the war to be over in a short time, and the North called out 200,000 three months' volunteers. The men who responded were individually brave and intelligent—our nearest kin in point of breeding—and they loyally endeavoured to do their best; but their first attempt when the bullets began to fly was almost ludicrous on both sides. They went into action at Bullsrun bravely enough, and loaded and fired with commendable energy, though little accuracy. Soon the men began to fall in considerable numbers, and then a sense of loneliness and despondency seized hold of the individuals. Private Smith began to suspect that Private Brown was not doing his utmost, and was making up his mind to let him (Smith) do all the fighting. So, presently, one man after another left off fighting, and started to walk home, declaring loudly that "he had not come there to

fight the whole rebel army," and the same thing happened on the other side. Ultimately, a few fresh battalions arrived by rail on the side of the Confederates, and then the whole Northern Army gave up and retired. Eye-witnesses have assured me that these retreating men were not panic-struck or even beaten, simply every man had lost all confidence in his neighbours, and they could not be rallied for any collective effort; they had ceased to be a disciplined body. As long as daylight lasted they fell back quietly and without despondency, chaffing the regular officers who tried to turn them again; but when night shut down their nerves gave out, and when suddenly the cry, "The Cavalry are upon us!" was raised, they simply bolted in the wildest disorder, and broke all records back into Washington, where ultimately they gathered, a beaten, dispirited mob, each one ashamed to look his comrade in the face.

Then it dawned upon every one that something had been omitted in their training, and that that something was the old despised mechanical "drill," which had seemed too old-fashioned and pedantic for such willing, intelligent, patriotic heroes, and they set to work to remedy this defect.

They drilled fiercely, even savagely, enforcing obedience with the severest punishments. Under this treatment a great number of the three months' volunteers dropped off, but men came forward to take their places for the "whole war," and after a few months an Army began to appear.

When next they met the enemy, who had been making similar endeavours, there were no more "Bullsruns." Both sides fought with the grimmest determination, and stood up to punishment as few troops have ever succeeded in doing, as Fredericksburg, Gettysburg, The Wilderness, Cold Harbour, Petersburg, etc., abundantly proved, yet the average length of service did not exceed one year.

Still, their introduction to fighting had been relatively gradual; and it remains to be shown that purely peace-trained soldiers can be relied on for desperate service if the system is sound.

The proof will be found in the regimental histories of certain battalions of Garrison Artillery raised originally for the defence of the lines of Washington, but ultimately in 1864, after about two years' drill, when the course of the war had removed all danger from the capital, drafted into the Grand Army, and employed as ordinary Line battalions.

The 1st Maine Heavy Artillery may stand as a type of the whole. They had their first baptism of fire in the desperate wood-fighting around Spottsylvania, and having marched out 1800

strong, they had shrunk from sickness, wounds, and all causes within about six weeks to 900 of all ranks present on parade on the morning of the 18th June, 1864, before the Confederate lines around Petersburg. Owing to deficient Staff arrangements, the battalion received orders to assault the works directly facing them, and immediately proceeded to obey them. There was no Artillery covering fire, and from the cover in which they lay, nearly 1000 yards from the enemy's lines, their own musketry would have been practically useless. So, without hesitation, in one long line, without supports or reserves, they endeavoured to advance across the open, and without a check got within 150 yards of their objective. From the moment they broke cover they came under a tremendous fire of artillery and rifles, to which they could make no reply, for they could not stop to reload their muzzle-loaders (standing), and the men fell in swathes. By the unanimous testimony of all eye-witnesses their conduct was superb, but flesh and blood could do no more, and at length they broke and ran, regaining their cover some twenty minutes after they started, but leaving 604 out of their 900 on the ground behind them—a proportion rarely exceeded by the finest veteran battalions of any nation. Of course, the attack was a blunder of the very worst quality; but the fact that this was apparent to everybody only shows the staunchness of the men the better, and gives one some idea of what might have been achieved by such troops properly handled. And these men were not submissive and obedient Slavs, but highly strung, individualised American townsmen, forged and welded together by the drill-ground only.

I think the foregoing will suffice to prove that the habits of minute and instantaneous obedience to orders on parade—which we call “drill”—actually does have a far deeper and more widespread influence than people usually imagine.

We have now to indicate how it is that these results accrue.

To begin with, we have to consider what constitutes courage in the ordinary individual. Most men who have had experience of accidents in the workshop, in the boiler-room, or indeed anywhere, will agree that the bravest man is the one who best has his nerves and feelings under control, whose will is so much stronger than his bodily fear that he can compel himself to hold on to the performance of his duty in face of the most imminent danger. Of such heroism the annals of our railways, workshops, and mines are full. One can hardly open a paper without seeing instances.

A certain degree of this power of self-control is inherent in all men, except amongst those unfortunates whom medical men classify as idiots or imbeciles; and experience shows that by

certain exercises, involving a concentrated effort of mind and muscle, this power can be enormously strengthened—so completely, that in progress of time no occurrence, however unexpected or terrifying, will make the trained man twitch a muscle.

Further, this tendency can be enormously strengthened by giving the man a habit of concentrated thought in the performance of the duty in hand which renders his mind incapable for the time of receiving any other impression from external sources whatever.

It is in order to secure this intense concentration of mind that military discipline has always insisted strongly on three points: Absolute silence in the ranks; the maintenance of the constrained position of attention; and the instantaneous obedience to the word of command. Silence prevents distraction; the effort to maintain the position of attention dulls the mind to external impressions; and the habit of springing to the word of command still keeps the man alert and ready for obedience. If these three points are neglected, then military drill is little better than a farce, and a dangerous farce, too, for it leads men to believe that they possess a virtue which in fact is non-existent, and when the first few bullets whistle about them the illusion is dispelled, discipline ceases, and the regiment becomes a panic-stricken horde.

Panic may seize even good troops, for it is impossible in peace to prepare them for all contingencies, but where the drill-ground training has been sound, a single word of command may, and generally will, save the whole situation; the momentary wave of terror will be overcome, and the credit of the regiment saved, perhaps the fate of the whole Army changed.

It is the unknown always which holds the greatest terrors for us all. Therefore a great part of a soldier's training must be spent in familiarising him as far as it is possible in peace with the nature of the dangers by which in war-time he is surrounded, so that he is already acquainted with them to a certain degree, and finds nothing to surprise him when they arise. For this purpose we have autumn manoeuvres and field-training, and lectures on warfare generally; but these can never replace the preliminary foundation, which can only be acquired on the drill-ground; and in point of fact they are positively dangerous until this initial habit of self-control has been acquired. I mention this as a warning against the canting nonsense one so often sees in the papers about "practical" work, and "time wasted" in marching past and ceremonial. All work smartly done is "practical;" nothing is "practical" which is performed in a slovenly, undecided manner.

But the value of the drill-training does not end here—in making men individually braver than they would be without it—it makes them collectively far braver than the individual can ever be.

How this happens is very difficult to explain. Strictly speaking, no scientific explanation is possible, for we have to deal with human feelings, which can be neither measured, nor weighed, nor expressed in definite terms.

We only know that a mysterious force is generated by the action of many wills, all concentrated on the same subject—a force which ultimately becomes so overwhelming that even the coward is for the time transformed into a hero by it. A politician facing his constituents needs no galvanometer to register it, neither does he require dead cats and rotten eggs to demonstrate its presence; unless he is suffering from a peculiar form of mental sickness which the Americans called “swelled head,” and the scientific experts have labelled “megalomania”—he feels it in the air as he steps on the platform. The actor, too, needs no hisses to warn him, and the clergyman in the pulpit is as well aware of its existence as he faces the congregation, though rotten eggs, hisses, and catcalls are usually considered bad form in a sacred edifice. Somehow or other, what is passing in one man's mind communicates itself to the mind of another, and where many are thinking the same thing, the individual trained mind reads it as a printed page.

If these results are apparent even in the presence of crowds who have never been taught to concentrate their will-power, it can easily be understood how overpowering this unspoken thought becomes when willed by several thousand minds, all taught to focus their whole will-power on the execution of the thing ordered.

History is full of examples of what this power can do. It tells us of individual regiments who have fallen to the last man in the performance of their duty, the will-power of the whole holding even the weakest under its spell; but in all history I know no finer instance of this power than in the behaviour of the men on the *Birkenhead* and the *Sarah Sands*, and in these later days on the *Warren Hastings*. The men of the old 6th Royal Warwickshires and the 54th belonged to the days of our forefathers, but those of the 60th on the *Warren Hastings* were short-service boys, who only a year before had been walking about in the streets of Gosport.

Yet, with certain death staring them in the face, in pitchy darkness, on the sloping decks, the pride in the regiment, the

overmastering will-power acquired on the parade, held even the weakest in the ranks, and not one man ventured to show his distrust in his comrades by endeavouring to secure his personal safety.

Of all the despicable crimes a soldier can commit—to attempt to save his own wretched life by disobedience of the orders received, which implies distrust of his comrades and his leaders, is the lowest and most cowardly. It is rightly laid down in the Army Act that cowardice shall be punished by a shameful death; and it would be well for us if we were more often reminded that such a law exists, and that in the field instances not unfrequently arise when the full penalty ought to be strictly enforced “to encourage the others,” for it is not fair to the Army that such things should be passed over in silence.

There come moments in the history of every regiment where fatigue, exhaustion, hunger, and sickness have lowered the courage and endurance of the man. An alarm is given, the will-power of the weaker fails, and in a moment all is panic and confusion. Positions which should have been held are abandoned, the flying mob runs back upon its supporting lines, and hours of fighting, together with hundreds of lives, may be sacrificed to redeem the error of a few, perhaps only of one individual. That individual, or those few individuals, may have yielded to a merely passing fit of despondency or gloom, against which the knowledge of the certain punishment he incurred by so yielding would have held him proof; but the harm is done, and hundreds have paid the penalty. Is it fair on the Army that they should not be protected against such risks by every means which the force of law can command?

As a fact, the common sense of every body of raw troops led out into the field has invariably, after one or two checks, clamoured for the enforcement of the maximum penalty in all such cases, and at the same time willingly submitted to the severest course of drill-training, instinctively realising that through drill alone can that reliability and steadiness in danger, which in the field is so all-important, be acquired.

It remains to be shown that discipline actually pays, not only the nation, but the individual, by improving his prospect of ultimate survival. No man dies altogether willingly, still less does he relish the prospect of mutilation. Now, if troops will fight on till every other man is down, not only does it become possible to expose far fewer men to danger, but for an equal number of men far more decisive results are attainable, and decisive results act and react over the whole theatre of international politics in a manner which defies calculation. How many times in history

might not the fate of nations have been changed by just one fraction more of disciplined steadiness on one side or the other at the crucial moment? If at Waterloo the quality of the British troops had been even a trifle below what it actually was, how many more years of warfare might not have devastated Europe? But apart from these general considerations, which nowadays every one is too prone to neglect, the degree of discipline existing in the troops under his command is almost the only bedrock foundation on which a general can build up his plans.

Victory depends on a locally acquired fire superiority. Let us assume that to acquire this superiority an intensity of fire of say one hit per square foot of target per minute is required; then, if the standard of marksmanship in the attacking troops is such that at 200 yards, under service conditions, they can make this one hit in ten rounds, then, since the apparent size of the object varies inversely as the square of the distance, they would require 100 rounds for each hit (the consequence of aimed fire) at 400 yards, and 10,000 at 800 yards. One man to the yard would fairly suffice to achieve this result at 200 yards in one minute, but ten men would be required at 400, and 1000 at 800—an obvious impossibility, which, however, can be got over by the convergence of a number of rifles on a given point.

Assume, again, that this 200-yard firing position can be reached from a distance of 1000 yards by troops that will stand 50 per cent. of loss, then only two men for each yard would be necessarily exposed to fire, and a provision of say three men to the yard would fairly meet all requirements.

But to get ten men to the yard to the 400 yards' limit would expose three times as many to fire, and though, owing to greater range the percentage of hits on the advancing line would be, of course, materially less, the greater time required and the denser target would make up a far heavier gross total.

Now it does not matter to the nation whether private Smith or Brown is killed, neither does it matter much to Smith what happens to Brown if he survives; but it matters very materially to both the nation and to Smith whether there are only 1000 Browns killed out of the whole Army in attaining a certain result, or say 10,000 in the same battle. Smith as an individual unit in the whole Army (not of a particular company) has a far better chance of coming out of action unharmed in the former than the latter case, and the nation has 9000 fewer soldiers to mourn, and a correspondingly reduced pension list to provide for.

Of course, this is no complete solution of the whole problem, for as a whole it is in its nature insoluble by mathematics or any

other method of investigation, but this rule underlies the whole, and cannot be neglected without most serious danger to the whole design. I have stated it in its simplest form for the sake of simplicity, but for those who care to go into the problem more carefully I suggest the following line of investigation :—

Fire in action is never either entirely “random” or entirely “aimed ;” it fluctuates between these limits as the violence of the struggle varies. Take a given instance, and work out the number of hits which would be made on a certain target by average shots under normal conditions at different ranges, then calculate out the probable hits if the fire were unaimed, plot out the two curves to scale, and you get certain definite limits as a guide to what is possible ; given a certain standard of quality in the troops, then to reach a given distance you cannot lose more and you may lose less, according to your success in reducing the accuracy of the fire to be faced, which again will be in proportion primarily to the discipline of your troops.

It is not suggested that commanders ever have made use of such calculations and diagrams on paper in the field, obviously such methods would be impracticable under the circumstances, but it is asserted that all great generals have been successful or the reverse precisely in proportion to their instinctive skill in gauging the rapidly varying effect of the several above-named factors on the “moral” of the troops engaged on both sides, and in only launching their men to the final assault when the effect of the fire preparation has diminished the accuracy of the enemy’s aim to such a degree that it is no longer sufficient to inflict losses above the “breaking strength” of the assaulting troops employed ; and further that, as weapons have improved in range and power, it has become more and more possible for the commander to suit the task to the capacity of his men.

In Frederick the Great’s time, when the mobility of Artillery was low, the work of preparation fell almost entirely on the Infantry line, which could only advance to the final bayonet assault when by its own fire it had cleared its way, and in the nature of things it always incurred the risk of being itself overpowered in the attempt. It might be successful at one point, the reverse at another, and whether it went forward or not could only depend on the initiative and resolution of the troop-commanders on the spot ; the general himself, once the troops were committed to the attack, could exercise no further influence on the result.

In Napoleon’s day the mobility of Artillery and the terrible power of case-shot preparation, together with the more judicious use of reserves, made it possible for him always to reduce the

resistance of the enemy to the limit he knew his men could overcome before launching the final blow, and, as we all know, against Armies whose fighting strength he could gauge by experience, the result was practically a mathematical certainty. Then came the introduction of rifled small arms, when for the time the power of Artillery fell behindhand, and again, as in the American Civil War and the Bohemian Campaign of 1866, and the early battles of 1870, the struggle resolved itself into a series of Infantry duels as in the Seven Years' War, more or less uncertain, since the commander could no longer exercise decisive influence. Nowadays, by the evolution of shrapnel and the Q.-F. guns, we are back at the condition of things in which the great leader can again make his influence and intuitive knowledge of men felt throughout the whole campaign. He can not only decide where the battle shall be fought, but at what point it shall be won, with a certainty never previously attainable, for if he knows the percentage of loss his men will endure without checking, *i.e.* their standard of discipline, the enormous increase in Artillery range affords him room to concentrate as many batteries as he may think fit to cut down the resistance to the required level, and in proportion to the quality of his men to reduce their losses to the lowest limit, though losses, of course, there always must be.

Thus discipline acts and reacts in the following manner: Given a certain number of troops to be employed, then, in proportion as the standard is higher, fewer men will be required to hold the general line, whilst more will be available at the decisive point.

When the attack is launched, the better the troops, the nearer they will get to the enemy's position before being compelled to open fire, and the effect of this fire increases inversely as the square of the distance. The enemy's return fire is thus rendered wilder, and reinforcements can be brought up in better order and with less loss; fewer, therefore, will be needed, and the duration of the fight curtailed, whilst more will be left in hand to complete the pursuit, *i.e.* to extend the magnitude of the decision, but the greater the decision the shorter the war, and the less the losses from disease on the march, the less also the chance of outside intervention.

If the French had been beaten at Jena, *i.e.* if their standard of endurance had been fractionally lower, then it is true some few hundred fewer would have been buried on the battlefield itself, but more would have fallen in the pursuit, and the Russians joining with the Prussians, together with the insurrection of the South German States along the lines of the French communications, would of a certainty have exterminated the whole French Army

and thus saved Europe nine years' desperate fighting, in which not less than two million men are computed to have died in the several Armies, to say nothing of the sufferings of the civil population. And these vast stakes hung entirely on the small extra degree of devotion involved in the readiness of perhaps two or three per cent. of the men to die for their country at a prescribed time and place. Is it possible to urge more for the importance of "discipline"? But "discipline" is a consequence of "drill," not of marksmanship at the butts.

CHAPTER X.

Fire-superiority the first condition of victory—The occupation of the enemy's position is the second—Occupation implies the advance of "masses"—Hence exposure—"Masses" can only obtain cover from the ground, and to do that must remain under control—Individual marksmanship and collective fire-action—Limits of improvement in each—Experiments with Volunteers and Regulars—Evils of "rifle-club" practices—Boer shooting judged by number of hits and compared with European standards—Importance of confidence in leaders—Examples—Responsibility of company commanders—Our ignorance of tactical evolution—Importance of the lecture-room—Lessons from Spion Kop—Comparison with the defence of Monte Legino, 1796—Limitations of a general's knowledge—Rate of fire of "maximum intensity"—Story of the late General von Wrangel—Victory must be paid for in blood—Our own fire is the best protection—Experiment to prove this—Origin of heavy columns—Fire in battle is not a constant quantity—Summary of argument—Mobility the ultimate condition of success.

To judge by the avalanche of books, papers, and letters in the daily Press, the public mind has fixed at last on the solid fact that victory in war depends ultimately on superior marksmanship of the troops engaged—a fact no intelligent soldier has ever disputed during the past 150 years; but soldiers and civilians part company definitely as to the methods by which this fire-superiority is ultimately to be attained. The civilian fails to grasp the enormous difference which exists between shooting at a target which does not shoot back and which stands out squarely against a contrasting background, at a more or less well-known range, and one which not only shoots back but uses every effort of human ingenuity to combine its fire in the most telling manner, and to hide its point of origin by skilful utilisation of its surroundings. He further loses sight of the consideration that to win a decisive victory something more is required than merely preventing the enemy from beating you, and that the means best adapted for the one purpose are by no means identical with those which promise the best results for the other.

To win a decisive victory it is absolutely necessary to turn the enemy out of the ground or position he occupies, and obviously this can only be accomplished by moving towards him, which

necessity absolutely precludes the possibility of merely lying still and shooting at the enemy ; a forward movement of the whole Army becomes indispensable, and in this the advantages the ground offers as cover can only be utilised by the mass, and not left to the judgment of individuals.

Even on the defensive, under normal conditions, where the bulk of the fighting falls on the two Infantries and the depth of the area fought over is not unlimited, movements to reinforce and support the threatened portions of the line are indispensable, and in these also the advantages of cover have to be temporarily sacrificed by the bodies making them who for the time being must move with reference to the situation as a whole, and not to the safety or convenience of the individual.

I have already discussed the conditions under which such movements become more or less possible, and pointed out that on the whole, in open ground, line will generally afford the greatest immunity from heavy "gross" losses, and that the degree of these losses will depend on the extent to which the enemy's aim has been unsteadied by previous fire-preparation ; it remains now to point out the conditions which will render this fire-preparation most effective, and for this purpose to investigate the relative advantages to be derived from teaching individual marksmanship at the butts, and the collective fire-action of groups under the direction of their officers.

Taking the average first performances of untrained Volunteer recruits—lads mostly who sometimes have had only a couple of hours' teaching in the handling of their weapons before being taken down to the targets—I find that at 200 and 500 yards they generally make about 60 per cent. of the total points, and, judging by a good many years' experience as musketry instructor, I know that no matter how long or carefully their instruction might be continued, their average could never be brought as high as 90 per cent. of the possible.

Speaking generally, the good shot is born, not made, and after a very short period of instruction every man reaches his limit, and no expenditure of time and ammunition will then improve him by more than a few points, and this improvement he is apt to lose if the conditions of the range to which he has grown accustomed are suddenly changed.*

* People in England are very apt to forget the extreme variations in atmospheric conditions to which our troops are liable, and the effect these may exercise on their shooting. One year men are fighting at sea-level in Egypt, with the mirage of the desert to contend with, the next in Tirah ; one day 10,000 feet above the sea, the next down in the valleys below 5000. Apart from the difficulties introduced by the clearness or the reverse of the air, the actual sighting of the rifles is thrown out by these variations in

Now note the difference which can be obtained by training in collective fire, which implies a thorough course of drill, four-fifths of which can be best inculcated on the despised barrack-square.

I have made experiments with a Volunteer battalion to establish some data on this point, and find, at the end of the annual camp, when the men have been drilled to the extreme of steadiness obtainable in the time, and practised in field movements with blank ammunition till they made more than a merely creditable display, that the best they could do with ball cartridges at a fair field-firing mark was 7 rounds (4 volleys and 3 independent) in 2 minutes and 30 seconds, and that it took from 25 to 30 seconds after the appearance of the target to get off the first volley—the percentage of hits being about 20.

With a drilled body of Sappers, at a similar target and range, I have often got 80 per cent. of hits, the first volley fired in 10 seconds, and the whole 7 in 1 minute.

If these two bodies of troops confronted one another, the one of almost untrained recruits, the other of carefully trained soldiers, then, though in individual fire the odds on the latter would only be some 30 per cent., which might be compensated for by half a dozen possible conditions of light and background, in collective fire the Regular soldiers would have had it all their own way, for before they felt the first volley from their opponents they would have sent at least two, and probably three, crashing into them, with long odds that the latter would never have fired a volley or anything like one in reply at all.

It is impossible to estimate this advantage in absolute numbers, one may safely put it at ten to one. The point is that it is due to superior drill-training, not to skill at the butts; for, in point of fact, of the two bodies with which I experimented, the Volunteers were a point or two better than the Regulars down the range.

The experience of generations of musketry instructors, moreover, has abundantly proved that the only way by which a man's natural standard of shooting can be improved on the ranges is by the most minute attention to the points of detail laid down by the

barometric pressure to an extent which almost defies the calculating powers of the average man's brain on active service conditions.

There is a story of a certain well-known officer, who, being of a highly scientific turn of mind, took an aneroid barometer with him on one of our many hill expeditions; he took his range and consulted his aneroid, and calculated his trajectory accordingly, and was discomposed to find that his men were hitting nothing. A survey officer, who happened to be at hand and had spotted the aneroid, guessed what was the matter and asked to look at the instrument, and found, as he expected, that the needle had gone all round the dial, and was indicating a point some 5000 feet below the true altitude. If an officer provided with accurate instruments can get so far out of his reckoning, to what degree of error may not the average private attain?

Musketry Instructions, and, unfortunately for those who hold the opinion that rifle-clubs alone will suffice to make us a nation of soldiers, it is precisely these points that in these clubs are most frequently neglected. To attempt to insist on them would make attendance unpopular, and the men must be kept in a good humour; so every man is allowed to shoot as he pleases, to twist himself into impossible attitudes, to dwell on his aim for 50 to 60 seconds—I have often timed them—and generally to acquire bad habits it would take months of hard drill to eradicate.

If, for the Volunteers, I had to choose between unlimited cartridges and no drill, or all drill and no cartridges, I would unhesitatingly choose the latter, for with good drill one could bring the men up to their full standard of shooting in a few weeks; but, as I said above, it would take months of drill to eradicate the tricks of the rifle-clubs. The Boers themselves are the best proof of my contention, for, though the best shooting race in the world as individuals, as a body their practice, judged by previous experience, has been worse than second-rate. Compare the losses inflicted by the French VIth Corps on the Prussian Guards at St. Privat with the Boer shooting at Magersfontein, and the losses of the Prussian gunners at St. Hubert (Gravelotte) with the time Colonel Long's guns were fought at Colenso.

Next to drill, confidence of the whole Army in its leaders seems the most potent factor of good service shooting. The point comes out very clearly in the history of the Franco-German War. Thus, at Woerth, the French accounted for one German for about every 400 rounds fired. Until the overwhelming numbers of the latter brought about a decision, the former despised their enemy as an "*espèce de milice*."* They fought with the assured confidence of victory on their side, and, as a consequence, took what was, for battlefield practice, very steady aim at the advancing troops. But ten days later the IVth (L'Admirault's) Corps at Vionville, though about the best in the whole Army, was so far shaken in its confidence that, under far more favourable circumstances of ground, light, and target (as I have pointed out in previous chapters), they did not average more than one hit per 700 rounds fired, and later on, in the actions culminating in the capture of Orleans, we find them expending up to one million cartridges without permanently disabling a single Prussian.

For the detail of these incidents I must refer the reader to my previous writings, both on Cavalry and Infantry. The idea underlies the whole series of articles, and the evidence is, I submit,

* This description of the Prussian Army occurs in one of the French text-books for instruction very popular before the war.

conclusive of the enormous influence this "confidence"—which I regard as outside and distinct from "discipline," the product of a "drill" training—exercises on the fighting value of a large aggregate of armed men, which may, in fact, be an Army only in name, but may nevertheless possess a very high degree of this quality.

I call attention to it because I believe its evolution hitherto has been considered in a very haphazard manner, and has grown, not been created, as it undoubtedly should be.

Now that we have got the responsibility of the company commander definitely fixed upon his shoulders—at least, as I read them, that is the intention of the new regulations—the way stands open for a more effective treatment. We can take the soldier more into our confidence, and make him understand that the regulations and instructions to which he has to conform are in fact based on sound principles and experience, applicable, with small local modifications, to all conditions of armament, and not merely crusted old traditions to be left behind on the barrack-square when the regiment goes to the front.

Unfortunately, it is precisely in this knowledge of the evolutionary history of tactics that the British Army is so conspicuously lacking, but once a number of young and vigorous minds are allowed to take an intelligent interest in the making of their own men, a road will quickly be opened for progress.

It is in the lecture-room that the work must be begun; and the men must be reminded that death and wounds are no new phenomena in war, but have had to be reckoned with since the earliest times. One must make it clear to them that victory is the result of the combined action of many units directed to a common purpose by a single head, and that, in the nature of things, no one of these units can ever know the precise degree of responsibility for the success of the whole that may at any moment accrue to it.

"Linesman," in his vivid description of Spion Kop, gives me an excellent illustration in point. After explaining to his readers the existence of the "soul of an Army," which is only the resultant dominating thought of the mass—and it is the confidence of this mass I contend that we should set about to win—he paints in most graphic terms the feelings of the onlookers who saw the devoted garrison of the Kop being driven around, "as a bather hunts his sponge in a bath" I think are the words he uses, by the shell-fire of the Boers. I have not the book at hand, but the impression it left on my mind was that every eye-witness felt that that garrison was being vainly sacrificed for no adequate purpose, and, unfortunately, it turns out that this was absolutely the case. But I maintain

that, taking Spion Kop as an isolated instance, without reference to what had gone before, then, unless every other detachment on the ground occupied such a position of altitude that the movement of every other body engaged could be seen as from a balloon—an assumption which, judging from such maps and printed evidence as is available, is not in accordance with fact—then this attitude of mind was entirely unjustifiable, and each detachment ought to have felt that the sacrifice on Spion Kop was part of the game, and, though they might not see them, other columns at other points were all moving forward in conformity with a well-arranged design to reap the advantages to be gained by holding the enemy's attention. We now know, alas! that this was not the case; but if the confidence of the Army had been as it should have been (apart from any consideration of where the fault actually lay), I submit that it would not have occurred to a single man, even in the garrison of the ill-fated spot itself, that they were doing anything else but playing their allotted part in a well-thought-out scheme of action, the issue of which depended on their own self-sacrifice.

Let me cite a parallel case, on which, all unknown to the actors, the destiny of all Europe for twenty years to come depended. It is well known now that in 1796 the initiative of the Austrians for some days completely disconcerted whatever plans for their defeat Napoleon may or may not have formed. He was still engaged in closing up his troops to the front and providing for their endless deficiencies in clothing, boots, and armament, when, on April 11, D'Argenteau suddenly advanced between Genoa and Savona, threatening to cut his Army into two fractions. The Austrian plan was defeated by the heroic resistance opposed by the garrisons of a couple of insignificant redoubts on the summit of Monte Legino. These garrisons were not commanded by the "brave Colonel Rampon," and they did not take a theatrical oath to conquer or die as the bulletin reported. On the contrary, knowing nothing of the tremendous issues which hung on their tenacity, the stout old Swiss colonel actually in command and his men took it all as in the day's work, beating off one attack after another until night put a stop to the fighting, duly reporting how matters stood to the foot of the hill.

Napoleon saw the danger quickly enough, and calling on every body of troops within reach to march as they stood,* literally, he succeeded in bringing together some 14,000 men before the fog rose on the hill next morning, and these 14,000, driving the Austrians before them, set in motion that gigantic avalanche of armed men which ultimately entered every capital on the Continent,

* See also 'Evolution of Modern Strategy,' chap. v., by the Author.

and spent its strength upon the steppes of Russia. Ever afterwards, "confidence in *the Leader*" was the secret of French success, for of discipline in our present sense of the word they never had any worth speaking of, but on this occasion it was the driving spirit of four years of almost constant ill-fortune that had taught every one the need of absolute ruthless obedience to orders as the sole hope of success.

La Harpe's division, when the orders reached him, were in the act of being served out with new boots, and were several hundred stand of arms deficient, but they marched at once without boots or arms, trusting to provide for themselves from the dead and wounded, according to acquired custom—this was what energy in the conduct of operations meant in those days.*

But though it should be impressed on the men that everything may turn on their conduct as a unit, it must equally be driven into them that no one general officer can possibly foretell in advance precisely what strain may fall upon their particular party.

The fact that the enemy also has a will of his own alone precludes it, and even where he happens to be of a lethargic and unenterprising nature, still there are limitations imposed on a general's power, by the imperfection of his information, inaccurate maps, and a dozen other contingencies, with all of which it is impossible to grapple. Men must not believe themselves betrayed and abandoned because at some point or other of a line many miles in extent something happens to miscarry.

In the main, troops learn this lesson on the manœuvre-ground, particularly when that ground is not too familiar to the contending parties, but when the work is always done over the same district, and every feature in it is labelled "This is a hill," "This is a bog," etc., as at Aldershot, both men and officers are apt to feel lost when they get into a country which has not been so industriously ticketed. I should like to see a British Staff and Army working with the maps Napoleon possessed in 1796 or 1806-7, but I should not care to belong to that Army.

There is one central piece of knowledge, to be ascertained only by experiment throughout the whole Army, which the British officer needs but at present does not possess, viz. the number of rounds per minute which his unit can expend to the best advantage; without it there is always danger of either too few or too many being employed, and the mistake may entail annihilation. The matter was made the subject of prolonged experiment throughout both the French and German Armies, and the result arrived at was that, when once a very moderate rate of fire—four rounds a minute

* See M. Bouvet's 'Campagne de 1796 en Italie.' Paris, 1900.

in France, six a minute in Germany—was exceeded, the hits began to fall off inversely as the square of the number of rounds fired ; and the importance of the knowledge can best be appreciated by considering the case of stopping a Ghazi rush or a charge of Cavalry : to reserve one's fire too much means that the troops are not being given their best chance, and to fire too rapidly means to waste ammunition.

I suggest that every year each company commander should make this the subject of experiment with his own command, using some of the ammunition at his disposal for field-firing, and every battalion commander should then repeat the test, and class the companies by their order of merit.

With this fact at his disposal, all kinds of fire problems can be worked out ; and though, when the commands are filled up to war strength by reserve men, the classification would be upset, still the habit of thinking in terms of *intensity* of fire, not of *rapidity* or *accuracy*, would remain, and a commander would soon adapt himself to the changed condition of affairs. Besides, captains would soon find out under what conditions their men shot best. On the range, perfect quiet and deliberation is best for individual accuracy, but, paradoxical as it may appear, it is a fact that larger bodies often score better when excited than in cold blood—just as some men never shoot game well until thoroughly roused. There is a story told of the late General von Wrangel, the truth of which was vouched for to me by a Prussian officer some years ago, which illustrates this point. He was inspecting some Pomeranian companies in volley-firing, which used to be carried out with the utmost calmness and deliberation. The first results were most disappointing, so the general said, "Captain, double your men about the ground a bit, and bring them up again." This was done, and the shooting improved. Still the general was not satisfied. He said, "No, no ; I know my Pomeranian lads : they are only half awake. Double them round again." This time they came up with the blood fairly racing through their veins, alert and awake, and slammed in their bullets like a shrapnel shell.

Much the same, I take it, applies to our men. At any rate, I have again and again been assured by men who have seen some very ugly fighting in the past thirty years, that, as a rule, British soldiers never shoot so well as when things are looking their worst ; then they set their teeth, the nature of the excitement changes, and their fire bites much harder than it did before. All our traditions point the same way, and I see no reason to believe that the nature of our men has altered.

Above all things, men must be taught that success in war is

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not to be had without paying the price in casualties, and that the means of reducing these rests primarily in the hands of the generals, not in those of the company officers, still less in the discretion of the individual.

It can only be exceptional that the ground in front of an enemy's position will afford ample cover for individuals, for it is the enemy's main object to select as clear a field of fire in his front as possible ; and when it comes to crossing this, then the only protection remaining is the intensity of one's own fire, and the surest and only way to secure this is to put as many rifles into the fighting line as possible.

The simplest way to make this clear to them is by direct experiment on field-firing targets. Deploy a firing party opposite a row of disappearing heads, say ten paces apart, and fire a given number of rounds against them ; then, at the same range, fire the same number of rounds at a line of heads one pace apart. Not one head in the latter case will be found to receive as many hits as in the former, though, doubtless, more heads will actually be hit, simply because there is a greater vulnerable area exposed. This means that if the targets were men, each man in the extended line would be the special target of ten or a dozen rifles, whose fire would be concentrated upon him personally ; and even if he were not immediately hit, he would be flurried in his aim by the conviction that the fire-superiority was heavily against him. If he tried to move, a storm of bullets would warn him to lie still, and he would probably very willingly take the hint. In the closer line this sense of isolation would be less, and though more men, as I have said, might be actually hit, his individual chance of escape would be greater. But it is this individual danger, or sense of danger, which ultimately counts, and which has to be minimised to secure the cohesion of the whole.

It was not because Napoleon and his marshals were ignorant of the fact that a column of 10,000 men is easier to hit than a single man, that they sanctioned the employment of heavy columns, but because experience had proved to them that where individual courage was lacking to face the danger of an extended order advance, the feeling of danger had to be reduced by massing the men in order to make them go on at all.

When the direction of advance offers cover from sight in hollows and undulations, everything is gained by keeping the men together in close bodies, even if these hollows are swept by falling bullets, for if the men are not seen by the enemy no possible way of grouping them can make the slightest difference to the individual risk. It seems almost superfluous to make the remark, the fact

that you get just as wet in a shower by yourself as in company with a comrade would appear absolutely obvious, but from private letters and diaries which have recently been published, it is evident that the point was very frequently overlooked in South Africa. I recall one case which appeared in the pages of the *United Service Magazine*. An officer was ordered to reinforce his firing-line on the top of a ridge which intervened between him and the enemy, and he records how he carefully extended his command to ten paces' interval as a preliminary. Did he really imagine that by so doing he could diminish the risk to his men? If not, what possible object was served by letting his men out of hand before the necessity actually arose? All that strikes me is that he had never previously given half an hour's reasoned attention to the question at all.

The whole matter can best be grasped by summarising it in the following form: No tactics are either good or bad in themselves, but only with reference to the conditions under which they are applied, and these conditions change rapidly from the moment the first aimed shots are fired, till everything culminates in the supreme confusion of the final half-hour. Formations that it would be madness to employ at the commencement of an action may become the only possible ones in its latest stages, and *vice versa*. The art of command consists in a constant adaptation of the means at hand to the end in view, and by the nature of training an officer imparts to his men, both on the ground and in the lecture-room, he should make each individual realise not only that conditions vary, but that he is aware of these variations, and can adapt his leading to the change of circumstances. From this training alone can the mutual confidence between men and officers arise which is such an important factor in fighting efficiency, and which alone renders the apparent harshness of absolute discipline endurable to men of a fighting race.

It is only too clear that in very many of our units this confidence was non-existent, and under the conditions of the past thirty years—by which I mean the gradual transition from long to short service—it was practically impossible that it could be otherwise. In imitating the Prussian system we left out the corner-stone, the independence of the company commander; now that we have made good this omission the way before us is clear, for the increased interest young officers will be compelled to take in their work, and the certainty of reward which will automatically follow their exertions, will supply the driving force the machinery of the Army has all these years been wanting in.

English officers are neither fools nor knaves, neither are they

all intellectual giants of the Cromwellian or Bismarckian order, but very human men with rather more than their share of a soldier's failings—ambition and a thirst for honour—to be played upon; and if, in the past, social and political interests have been the chief factors in opening the way to preferment, that is not because the nation possesses a double dose of original sin, but simply because forces always act in the line of least resistance. If men neglected duty and devoted themselves to social pleasures, it was because duty promised no results either immediate or prospective, whilst pleasure promised both; reverse the conditions, and the line of least resistance changes, but it will only be the “stayers” who will win on either course.

In conclusion, let me sum up the whole argument which underlies both my present work and its precursors, ‘Cavalry: its Past and Future,’ and ‘The Evolution of Modern Strategy.’

As I read the lessons of the past, the whole evolution of Tactics and Strategy has been a struggle between the two principles of mobility and passive defence, in which step by step the former has obtained the advantage.

In the earliest days when mobility was at its lowest, the possession of fortresses was everything, and sieges often lasted for years; but as the factors which make for mobility increased, *i.e.* the fertility of the invaded country enabled the invaders to live on the land and isolate the fortresses, the danger of isolation became so great that the defenders had to organise field Armies to keep the enemy at a distance. In the field the mounted forces naturally told, more or less according to the district they fought in, and the preliminary victory of the horse became an indispensable prelude to the destruction of the other side, and this not because of any special honour or distinction belonging to the Cavalry as an arm, but because until it had driven the opposing horsemen off the field, the general could not combine the efforts of all three Arms against the remaining Infantry.

No Cavalry ever possessed or could possess the power of breaking unshaken squares of pikemen—ten rows of 18-foot pike were an insuperable physical obstacle; but once the field was cleared of their mounted enemy, the musketeers could skirmish up to the pikemen and destroy their order at their leisure, for the opposing musketeers could not leave the shelter of the pikes for fear of the victorious Cavalry.

Now, the pike was exceedingly heavy and cumbersome, hence the side which established a definite Cavalry superiority over the other, having fewer Cavalry charges to face, promptly discarded their pikes for muskets, even before the invention of the bayonet

gave them a substitute ; * and, freed of this incumbrance, the whole Army could march both faster and further, thus inevitably rounding up their slower-moving adversaries into entrenched camps ; and as they covered more ground they also found better subsistence, thus gaining an immense strategic advantage.

But greater mobility led to wider extension, and increased extension required greater fire-power to lessen the risk of a counter-stroke, and this gave the impetus to seek for greater rapidity of firing, whether by drill or invention, or both.

Sometimes tactical mobility made up for strategic immobility, and *vice versa*, as in the long struggles between the line and the heavy columns, and both in strategy and tactics numbers often compensated for want of tactical mobility, as in the French Revolutionary campaigns and the victories of the Allies over Napoleon, 1813-14 ; but in all the end came by the rounding-up of the defeated Army and its ultimate surrender.

The American Civil War, the campaigns in Bohemia and in France, all point in the same direction, and now the Boer War teaches the same lesson in even bolder terms. It is enough to imagine the course of this struggle had the advantage of mobility been upon our side. Paardeberg and the march to Pretoria show what would have happened, but in half the time and at a corresponding reduction in cost.

The lesson is there for our administrators to learn. If our Army is to protect the exposed land frontiers of the Empire it must be mobile, and in every case the local conditions must be studied beforehand. Is there any indication that this problem has as yet been grasped by our reformers ? I think not, but I am prepared to say that if it were tackled on the lines incidentally indicated in these chapters, it would be possible to provide us with an Army possessing sixteen times our present striking power with less demands on our recruiting market and no increased cost to the taxpayer.

* See 'Cromwell's Army,' by C. H. Firth, pp. 69-80, and especially the notes.

CHAPTER XI.

Influence of new conditions on the "Fog of War"—Foreign critics ignore the special conditions of the theatre of war and mobility of the enemy—Comparison of Boer and Prussian frontiers—Under the circumstances our disasters unavoidable—We have been fighting a "Cavalry screen" with Infantry only—The conditions of a modern battle—Effect of Cavalry superiority—The "horizontal" and "vertical" dilemmas of the defensive—The advantages of the "initiative"—Effect of increased range of modern arms—Difficulty of concealing masses—A Staff officer's "trained eye"—Granted the difficulties of attack, nevertheless offensive strategy can never be divorced from offensive tactics—A siege a prolonged battle, a battle an abbreviated siege—Limits of rapid fire—Length of time required to aim increases with range—What really stops an advance, not hits but danger of being hit—Skirmishing remains an adjunct—The line is still the "decision-compelling" element—Meckel's remarks—The course of a modern battle—Blow of the last reserves—All aimed fire ceases, and the bayonet still decides—Lessons for the future—We are overdoing the "individualistic" idea—Clausewitz's warning as true now as when first written.

THE foregoing chapters have brought me pages of criticism, some of it most amusingly vituperative, but for the most part serious and well reasoned out ; I am not however shaken in my conclusions, because after careful consideration it appears to me that they all start from a fundamentally false assumption, with which I will now endeavour to deal.

Briefly, they assume that the incidents in the Boer War from which we have suffered so much—the want of information, difficulties of reconnaissance, liability to surprise, etc., indeed, everything which can be covered by the expression, "The Fog of War"—will everywhere be intensified in the future, and are a necessary consequence of smokeless powder, long-range weapons, and so forth.

That the new factors will exercise a considerable influence in these directions goes without saying. Anything that increases the difficulties of direct vision and direct control undoubtedly must always do so ; but the extent to which they will hamper the execution of an offensive campaign has, I think, been enormously overrated, for the following reasons :—

The task the British Army has been called upon to fulfil has been altogether abnormal, to an extent our critics—particularly those in Germany and Austria—have entirely failed to realise ;

and this task, initially conditioned by political and geographical considerations, could not be guarded against by any reasonable military precautions during the previous five or six years without precipitating the crisis they were intended to avoid. Now that the two Republics have ceased to exist, a recrudescence of the problem cannot conceivably happen, for in no other quarter of the globe can the same conjunction of affairs arise.

To bring matters down to a normal level intelligible to foreign opinion, we must imagine the Austro-Prussian frontier held only by two weak columns, one at Eydtkuhnen, the other at Lemberg (corresponding to Methuen's column in the Cape Colony and Sir George White's at Ladysmith), threatened along its whole extent from the Baltic to the Black Sea by the whole mounted force of the Russian empire, deprived of all true Cavalry by some unparalleled epidemic, with disaffection seething behind them, and no supports at hand within many days' march. The extent of frontier is about the same, and its topographical condition sufficiently similar—the Carpathians standing for the mountains of Natal, the marshes about Bobruisk for Basutoland, and the plains of Western Poland for the veldt of the Orange Free State.

The solution of such a problem never engaged the attention of a rational man—failure must be inevitable, provided only the enemy had the wit to come on; and the most to be hoped for would be that in the absence of a trained Staff on the other side, opportunities might be offered for a vigorous defence to gain time for the arrival of reinforcements; but we had the further disadvantage of the whole weight of the fog of war against us—only the expression “fog” is here out of place, for the enemy could see us, though we could not find him—and even when we had secured reliable information it was not of much use to us, because he could change his position far more rapidly than we could shift ours.

Under these conditions there happened to our people what has happened to others under similar circumstances all over the world, only generally to a far greater extent. The ubiquitous and elusive Boer got on their nerves; they could not trust their eyes as to what they had seen, and the Staff could make little use of such information as it did receive. Every one presently began to feel that things were not as they should be. Officers distrusted the scouts, and scouts the officers; the enemy was everywhere, and yet nowhere; and presently every boulder concealed a Boer, and every kopje an Army. That this is no exaggeration of the case will be evident to any one who will read the letters from the front and the collected works of the professional war correspondents. The marvel to the military student is that things were not many

times worse, considering what has happened in other Armies under less provocation. The French Light Cavalry in 1805 and 1806 was as conspicuous as the Prussian Uhlan in 1870 for daring and hardihood, their scouting was a marvel; yet in presence of the ubiquitous and elusive Cossack—even though the latter carried no firearms—they became as tame and gregarious as sheep when the wolves are about. Similarly the Prussians, who, in 1806, had been the laughing-stock of the French, turned the tables on their adversaries sixty-four years later; and nothing in the history of this later campaign is more instructive than the change which swept through all ranks of the German Army in 1870 when once the initial feeling of superiority had been acquired.*

That under similar circumstances of discouragement there should have been marked irresolution in our tactical proceedings should occasion no surprise; but to get at the normal teaching of the war we should reverse the conditions, and note what would have happened if circumstances had permitted us to oppose the 59,000 original Boer mounted riflemen with about an equal number of disciplined Cavalry on equally good horses or better, and with equal topographical and local knowledge such as the Prussians and Austrians can oppose to-morrow to the Russians.

The result would have been immediate and startling; the disciplined men would have rounded up the undisciplined commandoes, and if the latter had taken refuge in prepared positions, inaccessible to mounted arms, the following Infantry would have gone into action with a precise knowledge of their enemy's location, and that mutual confidence in one another throughout all ranks, which success invariably commands.

We have been fighting a Cavalry screen, with Infantry tied to ox-waggon transports; our drill-books were not calculated to meet such conditions—that is the whole situation in a nutshell.

As I have already pointed out, such a situation cannot occur again, and to frame regulations and train our Armies only for

* See p. 147, *et seq.*, 'Cavalry: its Past and Future,' for cases quoted from the diary of Captain Ganzauge of the Prussian Cavalry. I give General Mitchell's comment thereon, as I have no space to give the whole extract—

"Let us recollect that the Cavalry, which in column and at the trot attacked such feeble troops (*i.e.* the Cossacks), and afterwards formed a solid mob in order to repel them by the fire of their carbines; who drew up in line to contend in regular fusillade with the same foe; who forgot that they had sabres by their sides, and thought only of their spurs when retiring; that these men, who, to say nothing more, *charged at a trot and fled at a gallop*, were the soldiers of Napoleon; fought perhaps under his very eye, and had certainly been trained according to his regulations; and we can form some idea of the views on Cavalry warfare prevalent in the Imperial Army." This conclusion is hardly fair; the views on Cavalry prevalent in the French Army in 1807 were as sound as they could be, but in presence of the invisible atmosphere of nervous apprehension which surrounded them, their execution was impossible.

these really obsolete methods would be a far worse mistake than the one we are accused of having made, and from which in a measure we could not save ourselves, viz. fighting the Boers with the only means we had at hand.

To profit from our lessons we must consider the coming battle as part of a chain of cause and effect reaching far back into the histories of the opposing forces, interpolating our experience as situations more or less parallel arise.

The opponents of the offensive in tactics usually make the mistake of imagining the two opposing forces equal in all respects on the morning of the great battle of the campaign, so many rifles or muskets, guns and sabres, but of the men that stand behind them they usually say nothing. Strategists of the English Hamleyian school also deliver their pawns on the chess-board in a similar manner, and draw deductions from their position relative to one another and their respective lines of retreat, but in practice the result is generally already decided as a consequence of events which have preceded the meeting and determined the relative moral force of the two antagonists; and it is in ignoring this, or rather in assuming that the assailant normally approaches his task in the spirit of uncertainty in which we, owing to abnormal circumstances, usually encountered the enemy, that my adversaries, to my mind, give their case away most seriously.

Let us trace the events as between two great European nations from the period of mobilisation onwards. On both sides the most industrious preparation has been made for the contingency of war, but it stands to reason that exact equality can hardly have been attained by either. Generally the nation in which the spirit of "duty" predominates will be ready to strike first, and because the mounted arms are always the first to show the consequence of neglect in this first essential, its Cavalry will take the field in better condition, which means with greater potential mobility, and other things being equal, mobility decides—to what degree will depend on the extent and depth of the frontier zone available; the result may vary from complete annihilation to merely the driving in of the screen on to the frontier forts, but in any case it means first blood to the assailants, and a corresponding increment in the confidence of the Army and the nation in one another. On the other side there is corresponding depression, which spreads all the more rapidly with the degree in which every man recalls his own lapses from the narrow path in peace-time and his own experiences of the friction inevitable from mobilisation. If his new boots pinch him, or his serge is too tight under the arms, he feels sure some one is to blame for the dereliction: if the troop-train is an hour late, and

the soup he expected not sufficiently sustaining, again he thinks there is gross neglect somewhere, and determines to speak to the first correspondent that he may encounter. By the more successful Army all these little difficulties are overlooked in the warm and generous flow of satisfaction, success engenders : such minor hardships are inseparable from serious soldiering, and every one feels several inches taller in his own estimation for the spirit of endurance which nerved him to bear with them.

The side whose Cavalry screen has been driven in now has to rely on Infantry outposts for security, and immediately every wood, hollow, or other possible point of concealment contains an enemy's Army. There is no passage in military history better worth studying in this regard than the pages of the new French official history of the 1870 War, which gives every item of information as received and transmitted by every link in the chain of intelligence from the beginning of hostilities to the 6th August. It is no exaggeration to say that the French offensive, which might well have commenced on the 28th July, was absolutely inhibited by the rumours in circulation as to the presence of a hostile force of 100,000 men at Duttweiler, some ten or twelve miles north of Saarbrück, a point actually held by only a relay post of Hussars who had no suspicion of the numerical proportions they had assumed. So it will always be as long as human nature remains human nature ; and it is in this atmosphere of doubt and suspicion that the Staff are compelled to work and to solve the "horizontal" and "vertical" dilemmas inseparable from the defence.

The "horizontal" dilemma involves the solution of the problem how to be strong enough everywhere and not too strong anywhere : in other words, the relation of numbers to the extent of front occupied ; and almost every defeat may be traced to an error in the answer given.

The "vertical" arises from the distribution of the troops in depth, and varies with the conformation of the ground. In the convex slopes which characterise almost the whole of Europe north of the Alps it reaches its greatest difficulty ; but wherever dismounted men who cannot save themselves by flight on fresh horses have to stand and die it can never be neglected. For myself, except locally, I consider it insoluble, unless we make a clean breach with all the traditions of field fortification, and even then the alternative has its own drawbacks.

On the other side, the assailant, secure behind his Cavalry screen, can march, sleep, and eat in complete security ; if rumours reach him, they are minimised, not magnified. Every one has complete confidence in the skill of the leaders, and for the latter the

task is relatively so simple that the confidence may be easily justified.

It is one thing to frame instructions to meet a dozen eventualities, quite another to issue a single order which has but one positive aim in view, the defeat of the enemy when met with.

This is the cardinal point tacticians so uniformly overlook; it is generally dismissed with the simple words "advantages of the initiative," which no doubt sum up the whole situation, but convey little meaning to the untutored intelligence. A well-trained European Army fights in attack almost automatically: as the advance of each column is checked in front, the forward motion of the rear feeds up reinforcements mechanically; each rank has its own defined sphere, and its task is generally obvious. But on the defensive each move follows as a consequence of the lead of the adversary, and each move has to be initiated by definite orders. If this is not insisted on, co-operation on a predefined plan ceases, and all cohesion is at an end; but this is more than ever vital as the ranges of the weapons in use extend. Except in this one point, these relations remain the same whatever the weapons in use, provided they be equal; and with European conditions the advantage of concealment due to smokeless powder is not nearly as great as South African experience leads us to imagine.

To take this latter point first. It is obviously easier to hide 10,000 men on twenty square miles of ground than 200,000 on the same area; but it is only possible for 10,000 men to attempt to fight on the twenty square miles when they have the advantage of mobility and can evade contact at the decisive moment. Take away that mobility, and all the advantage disappears; the side which advances "massed" to strike the definite blow can break through before reinforcements can parry it, always provided the attacking force is resolute in its determination, and its leader not likely to be shaken by the responsibility of a reasonable amount of bloodshed.

If the Boers had not possessed this facility of evasion at the critical moment, Talana Hill, Elandsplaagte, Graspan, and Belmont would have taught them that 500 rifles to the mile were not sufficient to keep British bayonets out of their positions when these were not protected by a physically insuperable obstacle, and as a consequence they would have been compelled to place more rifles in the firing line. But the more rifles to the mile of front the greater the difficulty of concealment, and the better the target for the attack, also the shorter the front which could be occupied, and the greater the risk of being outflanked. So step by step they

would have been driven to form their troops in the conventional European manner—fighting line, supports, and reserves—and we should have had no more difficulty practically in locating their positions than we found every day in fixing the outlines of an ordinary peace-time manœuvre front. It is true scouts neither could or would ride about in the usual reckless fashion ; but against that one must set the fact that it is more difficult to judge where firing is going on when there are no bullets grazing around to give one the line. Actually, from my own observation on manœuvre-grounds of all countries, I am convinced that the value of smokeless powder in this respect has been greatly overrated. Given the knowledge of tactics which every Staff officer ought to possess, and the trained eye which it is his duty to acquire, and under normal conditions of the atmosphere it is almost impossible for European trained troops in adequate numbers to hide themselves from the trained eyes of the Staff who go out to look for them and are not tied to the movements of any one unit.

For the company officer the position is undoubtedly more difficult, though not more so than it used to be when fighting in bush or forest country against natives well acquainted with the ground. In the open, however, it cuts both ways ; formerly—say in the Peninsula days, when the skirmisher had to approach within 200 yards to obtain the same probability of hitting that he now possesses at 800—the difficulty of concealed approach over the last 200 yards was enormously greater than it is to reach effective range nowadays. The most inexperienced stalker will generally find little difficulty in getting within 800 yards of a buck, but to approach within 200 yards takes all the skill of an expert.

However, let us assume all the difficulties of the attack as likely to be encountered, will that be sufficient justification for the commander of the side which is ready first to renounce the advantages obtained by years of preparation without attempting to reap their reward ? To state the question is to answer it ; no commander as a fact has a free hand in the decision, for no Government could afford to retain a man in such a position who proposed recklessly to sacrifice the great opportunity to the attainment of which such immense preliminary exertions had been made. To be ready first means that the enemy is unready—*i.e.* still in the act of concentration—and every day's delay jeopardises the chances of falling on his column whilst in the act of closing up, and every hour sees the improvement of his defences. In the old days of Marlborough such deadlocks did from time to time arise, but as the troops were professional soldiers who had to be paid and fed anyhow, the delay was of no particular consequence ; but

with the modern nation in arms costing one million sterling a day in direct expense, and far larger sums indirectly in the paralysation of industries mobilisation entails, such a break in the continuity of effort is quite inconceivable. Certainly the general who proposed it would have to make way immediately for a more vigorous successor. Whether one likes it or not, the attempt will have to be made, because with Armies equal in mobility, offensive strategy conditioned by earlier readiness has as its necessary consequence offensive tactical action; the two cannot be divorced without loss to the whole. The attack, therefore, must take place, and it does so, as already pointed out, under certain conditions of advantage universally admitted which are inseparable from the form, whatever the armament, and which increase enormously in relative value as the numbers to be handled grow greater. There remains, therefore, only to be considered the influence of the increase of range and rapidity of fire on the methods of execution.

Separating the two, and taking the question of range first, it is obvious that the longer the range, the greater the time during which the assailant can be held under fire, provided always the front remains clear. Against this must be set the increased power of concentration and of selection of firing-position the greater range confers on the attacker, and which is quite independent of any question of rapidity of fire. This point is fully admitted by all experts in fortification, and to such an extent that no one nowadays even proposes to construct permanent works in the old style of thirty years ago, except for political reasons, *i.e.* to gain time for allies to bring support; and even in these cases, unless conditions are very extreme, it is held that money can be laid out to better advantage in the preparation of a battlefield to fight on, rather than in the construction of works of passive defence. Within ten years of the Franco-German War the point was so fully admitted that the very idea of defending a fort by guns mounted within the work itself was universally abandoned, and the guns moved outside into "annex" batteries.

The astonishing thing is that, though every one is familiar with the idea of "a siege as a prolonged battle" or a "battle as an abbreviated siege," even the ablest and most advanced Continental authors refuse to draw the logical conclusion.

Now, the whole point of a siege lies in the gradual approach built up on sound foundations to storming distance of the works, and each step in the process was admittedly only possible as a consequence of a previously obtained fire-superiority. The smallest field gun was always capable of stopping an advancing sap-head,

and no one ever proposed to "attach a miner" to an escarp as long as one single rifleman could show his head above the parapet to aim, and all this was quite independent of the rapidity of fire attainable. Now transfer this reasoning to the battlefield, and the conclusion follows that, given the superiority of fire, and the closer approach follows as a necessary consequence. It may have to be fought for again and again as reinforcements arrive on the other side, but, other things being equal, the power of concentration is the decisive point, and this must always remain in the hands of the assailant who knows where he means to strike and has disposed his forces accordingly. In all this rapidity of fire, being equal on both sides, by hypothesis plays no part.

Rapidity of fire begins to come into the question when we begin to consider the number of hits which can be made on an advancing target during a given time. Generally, it seems to be considered that the number of rounds that can be fired is synonymous with the number of hits that can be made. You load, raise the rifle to the present, pull the trigger, and down goes an enemy. With a modern breech-loader you can repeat this process ten times in the time it took to perform these operations once with the muzzle-loader. Hence the present weapon is ten times as deadly as the old one, and the losses will be in proportion. On this supposition, more or less, all books on tactics are based, although experience points in an entirely opposite direction. So far from this being the case, statistics show that modern battles are far less bloody* in proportion to their actual duration than they were in the past; it takes many more rounds than formerly to kill a man—roughly, ten times as many—and it takes longer, or at least as long, to fire them off.

This last point gives the key to the whole, and it has never yet, to my knowledge, been adequately followed up.

The time required to align the sights on a given object to score a sufficient hit increases enormously with the range. In the old days, when the final struggle for fire-superiority was fought out between standing lines of men at 150 yards, hardly a couple of seconds were necessary to take aim. If the musket took, say, eighteen seconds to load, and two to discharge, that gave three rounds a minute—enough from a two-deep, steady line to bring any advance to a standstill.

If the present rifle takes two seconds to load, then to make the same number of hits at 500 yards requires, as a matter of experience in peace, at least eighteen seconds to aim, so that, the men being considered equal in discipline and training, the new weapon enables

* The fighting in Manchuria has proved no exception to this general rule.

them to stop an attack as efficiently at 500 as was formerly possible at 150 yards only.

Now, one has to be perfectly clear in one's mind as to what it is that actually stops an advance, for notoriously no advance continues until every man in it has collided with a bullet; a percentage of hits varying with the quality of the troops is all that is required to bring home to each individual man the conviction that the risk of destruction within the next instant of time is too great to be faced any longer, unless the enemy's fire can be got under by his own, and instinctively the whole line halts and begins to reply. The number of risks to be faced in a given unit of time is therefore obviously the determining factor, and it must be perfectly apparent that it is entirely immaterial to the troops concerned how these risks are created, whether by breech-loaders, or muzzle-loaders, or by magazine-rifles, or single-loaders—the effect of a bullet meeting an averagely thick head is identically the same for the same weight and velocity; so that it all works out to this, that, since firearms became the deciding weapon on the battlefield, unshaken Infantry have been able to draw around themselves a zone of varying width to penetrate into which was impossible for troops in organised formations, except as a consequence of previously acquired fire-superiority.

Up to that limit, whether fixed by muzzle-loaders at 150 yards or magazine-rifles at 500, troops could advance, still under the control of their officers; and the whole problem of Infantry attack remains as it always has been, viz. to shorten this distance to be crossed to the utmost before attempting the final assault.

Skirmishers (not individual fighters) and the case or shrapnel fire of Artillery have always been the two recognised means of creating this reduction; but against troops which could be trusted to lie down under fire or keep in trenches if they had them, shrapnel and case were comparatively ineffective, and they were very soon masked by the advancing Infantry, so that the final struggle for fire-superiority was simply a duel to the death in which the best-disciplined troops generally proved victorious. Nowadays that the width of the decisive zone has increased to 500 yards, the assailants are no longer deprived of the Artillery support they require, and it is guns and Infantry against Infantry alone that is the net result of all mechanical improvements in the weapons. They have not in any degree altered the nature of the task to be accomplished, they have only changed the distance at which the final struggle takes place; and as a consequence arising from the use of successive reserves on both sides, it is probable, since men cannot charge across 500 yards of open ground, that the stand-up

fight for superiority may have to be repeated two or three times before the final irruption into the enemy's position takes place, and to meet this possibility troops now advance in four, five, or more "lines" (*i.e.* "Treffen"—the English word is confusing) where formerly two and a reserve sufficed.

Skirmishing remains where it has always been, an invaluable adjunct, but not the decisive element. In the old days skirmishers were "war-trained," not "peace-selected," men, who crept up, utilising the ground to the utmost, and annoyed the enemy by picking off officers, etc., who were obviously easier to identify in those days at 200 yards than nowadays at 1000, and the chance of hitting them was about the same ; but they could only be employed sparingly, because ground which gives concealment for 100 men to the mile will not necessarily afford cover for 1000, and further because if the skirmishing fire became too galling, they drew the fire of the whole line, with disastrous consequences, as was proved almost everywhere in Europe (1792 to 1800) when the French *Tirailleurs* encountered the disciplined line troops of Austria, Prussia, or Great Britain. As I have pointed out in previous papers, the ultimate victory of the French had nothing to do with their tactics. The same thing happened in 1866 and in 1870, where the fire of both Austrian and French Infantry in "line," and whether behind cover or in the open, stopped the Prussian skirmishers until the latter had been reinforced until they became a disorderly line two, three, or four deep, according to circumstances, under no kind of control, and liable to unreasoning panic.

It took hours to build up a fire-superiority in this manner, and cost far more lives than was necessary, because more men were put in than was actually requisite, and they were kept out in the rain of bullets for a much longer time. Meckel's remark on this point deserves the closest attention ; freely rendered, it runs thus : "It is difficult for the uninitiated to understand why it should be necessary to put in a force of ten men to the yard to occupy a position on which, after all, only one man (to the yard) can use his weapon with full effect, but those who witnessed the fighting in France will understand without further assistance ;" and lest we should be inclined to overrate our own prowess because such scenes as he elsewhere ('*Sommernacht Traum*,' for instance) describes were conspicuous by their relative rarity in South Africa, we must remember that we always had as good a weapon in our own hands as our adversary, generally could rely on shrapnel support, and had not to face determined disciplined Infantry which could not slip away.

Summing up, then, the course of a modern battle fought by an Army in pursuance of an offensive strategy rendered necessary to

exploit its superiority of preparation, I consider that it will commence by a general engagement of Artillery and skirmishers along the whole of a very wide front, which will hold the enemy everywhere and prevent him moving his reserves or induce him to move them to the wrong point. It will be possible during this stage for the attacking Artillery to make very considerable use of indirect laying, while it will be the object of the Infantry to press their attacks with such vigour that the defenders' guns will have to come out in the open to assist their own Infantry in keeping the assailants back, when their destruction will generally be only a matter of a few minutes. Probably 7000 or 8000 men to the mile (Infantry) will suffice to keep up this struggle for some hours while the Army Reserves are being massed under cover for the decisive effort. The disposition of the Germans at Gravelotte with the Xth and IIIrd Corps behind the centre of the line, with the XIIth and Guard on the left; the VIIth and VIIIth, and eventually the IInd, on the right, both wings converging inwards, gives the general idea.

The advantage of the converging attack is too generally understood and admitted to need further reference, so I confine myself to the direct frontal assault, assuming that the decision for this form is based on the results of the skirmishing action which has established such extension on the part of the enemy that the flanks can be no longer overlapped.

The two reserve corps will be formed up side by side in three successive lines of deployed divisions (British strength), all the Artillery in front, and a Cavalry division on either flank. The howitzer batteries will take up covered positions to search all cover where reserves may be hidden with lyddite shell, and when the first line of Infantry are well on their way to the point where cover ceases, moving in line of company columns at full intervals preferably, the Field Artillery will trot forward, and as soon as they come into sight, gallop well out to the front to thoroughly decisive shrapnel range, say 3500 to 3000, and open fire by "rafales," as the French call them, of shrapnel—*i.e.* two or three minutes' rapid fire, and then a few minutes' cessation, to induce the enemy to put their heads up out of their cover; then another burst of fire and so on—details of which will be found in General Langlois' writings.

The Infantry, deployed into line as they break cover, will follow, line after line, at about a quarter of a mile distance, and will close on the existing fighting line without firing a shot. Then will come the great trial of strength; and since in the past a well-timed attack generally succeeded, even without Artillery preparation, so it will in the present, since, as I have shown above, the risks cannot be greater, and may be very materially less. It is all a case of

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how you have trained your soldiers beforehand "to know how to die or how to avoid dying;" if the latter, then nothing can help you and it would be wiser not to go to war at all.

If the enemy stands to receive the assault, then the bayonet decides, and I believe no conscript troops will face it; it is more than probable that he will make a desperate counter-attack out of his position, heralded by every available gun and squadron he can get together, which of course will strike from the flanks, and must be met by the attacking Cavalry; but the difficulties in the way of this are endless, particularly if modern deep trenches and wire entanglements have been indulged in.

It is more probable that the fighting line will be withdrawn, if the slope of the ground anyway permits it, and rallied behind fresh reserves under cover, ready to make a counter attack as the assault reaches the summit of the position.

By this time all possibility of aimed fire may be considered at an end, and a resolute advance with cold steel of both foot and horse offers a very reasonable prospect of turning the scale—the charge of the Devons at Ladysmith is a case in point.* Imagine that multiplied by ten and initiated by twenty-four squadrons of Lancers. The risks are no greater than they were, say at Vionville and Mars-la-Tour, the time of exposure shorter, and modern humane bullets will not bring a horse down as the old bone-smasher did.

It seems useless labouring the point. I would only recall the fact that it is precisely to steady their men to meet these contingencies that foreign nations lay such stress on the drill of their companies and squadrons, and even our own drill-book admits that close-order formations are still essential to stop a Ghazi or Mahdist rush, but we have never yet had to stand up to such rushes with men shaken with perhaps hours of previous fighting, and their order loosened by lyddite and shrapnel shell; men on horseback charge home faster than men on foot, and the wound that brings even a Ghazi to the ground will be unnoticed for some minutes by a galloping horse.

It is impossible to disentangle the vicissitudes such a struggle *à l'outrance* may develop, and which, indeed, it is certain to occur if the discipline is as staunch as it used to be, and there is no reason why it should not be, for experience has proved that it is entirely a matter of peace-time training, and both in Germany, and Austria, the drill is quite as steady as ever in the past.

My whole position may be summed up in the following sentences:—

* Japanese bayonet attacks since delivered confirm this opinion.

(1) The ratio of unintentional hits to rounds fired must be far less in the future than in the past ; three tons of lead distributed in bullets over one square mile will lie thicker than, say, six tons over twenty.

(2) The modern rifles develop the same intensity of fire at about 500 yards as the old muskets poured out at, say, 150. It is as impossible to penetrate within that 500 yards limit now as within the 150 yards limit formerly.

(3) But since what "men have done men can do again," if it was possible without Artillery support to reach that 150 yards limit in closed lines, it is equally possible with Artillery help to reach 500 yards now.

(4) What happens then depends now, as formerly, on the staunchness of the men, for there is no royal road to victory. Victory or defeat is the final decision of the great Arbiter, who, for reasons unfathomable as yet to our limited intelligence, has decreed that from this award there shall be no appeal ; and, judging by the history of the world, we British have so far no reason to complain of injustice.

What will be our fate in the future who can say ? but we have a curious and ominous parallel in the case of Prussia during the years from 1794 to 1805. Like ourselves, she was much harassed by the superior mobility of the French, and, without appreciating the true causes of this mobility, sought to meet the emergency, whose coming she foresaw, by sacrificing the best of her old system and undermining the confidence of her fighting men by reckless denunciation of what she maintained. Our modern polemical literature finds an exact parallel in the proposals of the reform party in Prussia during those years. Ultimately, she met a totally new Army, handled by a genius, and went under ; we, wiser in our generation, stuck to the best of what we had, refused to listen to the suggestions identical in spirit which then beset us, and proved the result in the Peninsula and at Waterloo.

I claim for the ideas I have developed in this and preceding chapters that I have shown the continuity of tactical development throughout the last three centuries, and demonstrated by accurate scientific method that the spirit of the old Peninsula tactics remains essentially unaltered by all modern improvements, and, if rightly understood, will supply us with a form of tactics better adapted to modern needs than any other now in existence.

We are now at the parting of the ways. Read the lessons of the Boer War by the side of other struggles under normal conditions, and with the light shed upon them by the casualty returns, and our course is clear ; but take them with the assumption that

all Europe and all the world are about to buy horses to mount whole Armies of millions, and turn their city populations out into their forests and mountains to learn Boer independence and initiative, magnify the terrors of the magazine-rifle till it becomes a kind of malignant fetish, and the downward course will be swift and sure.

In conclusion, and with special reference to this cult of the "individual," let me recall the following words of Clausewitz,* written with the consequences of a similar mania before him :—

"All inventions of art, such as arms, organisation, exercise in tactics, the principles of the use of the different arms in the combat, are restrictions of the natural instinct, *which has to be led by indirect means to a more efficient use of its powers.* But the emotional forces will not submit to be thus clipped, and if we go too far in trying to make instruments of them we rob them of their impulse and force. There must, therefore, always be a certain amount of play between the rules of theory and its practical application. This entails the necessity of a higher point of view, of great wisdom as respects theory, and great tact of judgment as respects practice."

Just as formerly, in the pre-Crimean days, we overdid the barrack-square training of the soldier, so we are nowadays in great danger of overdoing the individual initiative theory, and the dangers of the latter method are with our people much greater than those of the former. With all our drill-ground practices we never succeeded in quelling the individual fighting instincts of the soldier ; but if by magnifying the dangers we undermine this individual instinct, shall we ever get the collective fighting instinct which formerly carried regiments on to victory, even when more than half their numbers had fallen? Tabulate side by side the record figures of the Peninsula, Waterloo, the Sikh War, and Crimea with those in the Boer War—the result speaks for itself.

* Clausewitz, Graham's translation, 'The Theory of the Combat,' p. 130, § 45.

NOTE.—It must be remembered that all these pages were written before the Russo-Japanese War. It seems probable that more men (proportionately) have been killed by the bayonet in Manchuria than at any time throughout the Napoleonic wars. Compare Mitchell's 'Modern Tactics,' written about 1839. Many old Peninsula veterans asserted that the only bayonet wounds inflicted in their experience were on men already disabled by bullet wounds. The tendency of Lancers to blood their pennons by sticking dead bodies is generally known in all Armies.

CHAPTER XII.

The "Fog of War" no advantage in itself to either attack or defence—The analogy furnished by the siege of a fortress—Pieter's Hill, Alleman's Nek, Belfast testify to the adaptability of our officers—A system of tactics for instructional purposes requires a far broader basis of observed fact, going back far before the breech-loader—Explanation of chronological chart—Uniformity of number of bullets to be faced per unit of time—Collapse of fire-power more sudden than in old smooth-bore days—The factor of time in aiming, and its importance—The impenetrable zone—No greater difficulty in reaching its boundary than formerly—Why these points were not realised before—Our small casualty lists show no falling off in quality of troops—Conditions for surprise easier—Disadvantages of defenders—100 guns do more work in a given time than 10—Infantry marches no faster than fifty years ago—Formations must be suited to ground—To build up fire-superiority by dribblets exposes one to defeat by dribblets—Opinion of von Scherff—Explanation of phenomena in recent French manœuvres.

IN this final chapter I propose to summarise in the form of diagrams and chronological charts the essential data on which my conclusions are founded.

I admit, of course, that the "area shrouded by the 'Fog of War'" has become wider as a consequence of the increased range of modern arms, also that owing to smokeless powder it has become denser, *i.e.* more difficult to penetrate intellectually, but this of itself implies no relative advantage to either side in the struggle between attack and defence. My view is that it enhances very materially the advantage arising from greater preliminary readiness, as expressed by mobility and numbers, on one side or the other.

In proportion as this advantage increases, the free exercise of choice between attack and defence becomes more and more limited, because, for reasons entirely outside the sphere of tactics, the pressure on the commander whose Army is ready first is intensified; he ceases to be a free agent.

Once this preliminary advantage, due to mobility or numbers, or both, is established, the questions how, when, and where to attack almost answer themselves, in proportion to the amount of time the assailant can afford to devote to the purpose.

Take the case of a fortress embodying all that science and money can do to strengthen the power of resistance in its design;

once it is invested, and no outside interference is to be expected, the plan of attack can be drawn up with any degree of accuracy which may be considered necessary, and means can be provided to break down deliberately or neutralise all known expedients to which the enemy can resort. Such certainty in one's data is not to be expected in the field, but it must be evident that in proportion to the time and resources in mobility available, the assailant can, to use the words of a friendly critic, "notice a gap in the adjacent hedge, and save himself a headache."

The operations in Natal seem to me to prove my case up to the hilt. As long as the superiority in mobility was all on the Boer side, *i.e.* before the engagement at Pieter's Hill, the problems how, when, and where to attack seemed practically insoluble. As far as the evidence I can collect goes, I imagine that any Staff of any Army would probably have found the same difficulties, and made equally bad mistakes ; * but once the advantage arising from "mobility and numbers," either or both, was on our side, the troops seem to have been handled with a certainty and precision which left nothing to be desired. Alleman's Nek, Laing's Nek, and Belfast are cases in point ; our efforts appear to have been exactly proportioned to their purpose, and if the enemy had not been able to slip away faster than we could follow, his destruction must have been complete.

But this only proves our tactics right under the momentary circumstances, and though this contains the best possible testimony to the practical ability of the men on the spot to make the best use of their materials towards the attainment of the object in view,† it forms no justification for the assumption that the same methods found practically successful in these abnormal circumstances will be equally advantageous under normal conditions.

To formulate a really practical system of tactical instruction it is necessary to work from a far broader basis of observation, and by comparing the results of many experiments to find out what principles really are essential, and eliminate those that are not.

The records of recent wars fought with breech-loaders are too few in number and the conditions under which they occurred are too abnormal to supply the necessary foundation. We must, therefore, go back to the beginning of things, and note the

* An officer well grounded in field geology and cognisant of the influence of this factor on topography ought to have read the shape of the country like a book, even without a map.

† Note Moltke's definition of the Art of War: "The practical adaptation of the means at hand towards the attainment of the object in view." Note also his well-known remark that "English officers did not go to the front in first-class carriages."

essential conditions recurring in all, before we can hope to establish a base wide enough for stability.

This I have endeavoured to do in the accompanying diagrams, which are founded on the assumption which I take it most will accept, that the consequences of collision between a man and a bullet are for all practical purposes identical, whatever the nature of the weapon from which the bullet is fired. Granted that much, then the continuity of evolution in tactics since fire-arms became the essential factor on the battlefield follows, and we have an area of 300 years of battlefield experiment to build on instead of the usual thirty years of experience in which the conditions of armament, climate, topography and so on have never been twice the same.

Eliminating all problems of fortification, then the object of every commander standing on the defensive has always of necessity been to prevent the would-be assailant from reaching his front alive; and to do this it has been found by practical experiment that nothing less than a certain number of bullets delivered per minute per yard of front would suffice, the exact number varying slightly according as the men were more or less war-seasoned and staunch, but remaining singularly uniform between about six to ten bullets a minute for nearly a whole century, viz. from 1690 to 1790.

Diagram A is intended to show this graphically, the full line giving the number of rounds which could be fired by the individual soldier a minute, the chain dots the number delivered per minute per yard of front in the normal fighting formation; and it has been drawn up from the best data available, most of which are contained in the introduction to the Prussian official account of the Seven Years' War, and special papers on the same subject in publications of the General Staff. It will be noticed, taking the diagram as a whole, that every improvement in the weapon enabling it to be fired more rapidly (thus from 1690 to 1715 about, and 1860 to the present), or in the perfection of drill tending in the same direction (from 1715 to 1775), has always been discounted by reducing the number of ranks, so that the quantity of bullets delivered per minute has remained throughout pretty constant, except for the drop in the curve from about 1775 to 1855, and to explain this a few words need to be said.

Up to the outbreak of the French Revolution all Armies were essentially on the same footing—long-service, well-drilled men, who took a great deal of punishment before they could be stopped.

But with the disappearance of the old Royal Army of France there was a sudden break; the French revolutionary levies were entirely lacking in regimental cohesion, and fought only as "individuals"; those were the halcyon days of the "Tirailleur," who was by no means the same man as the old "skirmisher," though the immediate forerunner of the modern "individual fighter." Against these it was no longer necessary to show an unbroken line of battalions, and 30,000 men distributed in brigade groups on a front of twenty miles were generally considered ample to stop their onslaughts.

Then the French adopted De Wet's tactics, and massing their men together, hurled themselves on the over-extended lines opposed to them, and broke through pretty much where they pleased. This was the downfall of the "cordon" system.

Meanwhile, all over the Continent, the long-service Armies had melted away under the strain of years of continuous fighting, and the general drill of the Infantry had sunk so low that the "line" three deep could no longer deliver the same weight of fire, and there was no time, nor was it possible for other reasons, to go back to the old "file" fire. Though the actual number of men to the mile rose even higher than in the early days, they were held separate in successive lines of reserves, and the decision no longer depended on the breach of continuity in the first line, but on the result of repeated attacks and counter-attacks of the opposing reserves.

Two curious points are to be noticed between 1830 and the introduction of breech-loaders. Though during the long peace the standard of drill everywhere improved, the rate of fire fell off, owing, first, to the introduction of the percussion cap, which in practice was found to make loading slower than with the old flint-lock, and the substitution of the rifle for the smooth-bore, which also diminished the rate of fire, though it improved the accuracy and extended the range. With the advent of the breech-loader the rate of fire at once ran up, but the advantage, as I have previously pointed out, was at once discounted by the extension of front, which became feasible, and this tendency has gone on to such an extent that in order to get the same number of bullets delivered per yard of front, as in the Seven Years' War, 500 men to the mile would have to fire over thirty rounds a minute—a rate quite unattainable in practice.

Now, compare these curves with the curve of losses per "hour." The rate per "hour," being taken as a fairer basis of comparison than that per "battle"—for battles sometimes last a couple of days—per attack delivered, would be far more satisfactory if it

were possible to disentangle the exact figures from the casualty lists, but this being impracticable, the course adopted is generally accepted as sufficiently accurate for the special purpose, every expert, of course, supplying his own corrections for numbers killed in the advance, in the fire-duel, and in retreat, if retreat occurs.

It will be at once evident that there is no agreement between the rate of individual fire and the percentage of losses. Nothing could be more striking than the divergence between the two during the last thirty years. But the agreement between the number of bullets per minute per yard, dependent on the depth and drill of the actual fighting line, is most remarkable. The figures for Marston Moor and the Thirty Years' War require to be corrected for sword and lance wounds, but after that we find the curve fluctuate almost in exact agreement with the staunchness of the troops and the number of bullets per yard which have to be faced.

These conclusions, however, only hold good for steady troops firing with a certain and equal amount of normal battlefield excitement, and at about the same range. The moment the ranges increase and the nerve crisis which goes before defeat sets in, the shooting of men with the modern arms would go all to pieces far more suddenly and completely than in the old days.

This is primarily the result of high velocities, and can be best understood by the analogy of the watering-hose I used in my former work on 'Cavalry: its Past and Future.' The same quivering of hands which formerly scattered the bullets of a battalion over an area 500 yards wide now sends them flying over 3000; and there is this also to be taken into consideration, that, as I showed in my last chapter, rapidity and accuracy of fire are not convertible terms, but for every range there is a fixed rate of fire for every unit which promises the best results, which cannot be exceeded without serious loss of accuracy. Practically speaking, a line of men with Lee-Metfords would be able to make as many hits at 500 yards—thanks to their greater rapidity of fire—as an equal number of men with the old Brown Bess at 150, which used to be the limit beyond which the possibility of ordered movement ceased. But though 500 men to the mile can deliver the same number of bullets, by firing at the rate of thirty rounds a man a minute, as the old line, their power of stopping a rush at 500 yards is by no means the same, as the extra number of bullets they discharge does not make up for the diminished time of aiming.

The act of aiming at any given distance is quite independent of the ballistic quality of the weapon, and since in the example I gave

in my last chapter I assumed the time of aiming with Brown Bess at two seconds for 150 yards, the fraction of a second available when the weapon has to be both loaded and fired in the same time-limit is hardly likely to give equally good results.

It is not a matter susceptible of exact mathematical solution. The practical answer, however, can be deduced from our Afghan and Egyptian experiences. Would any one who ever stood up to a Ghazi or Mahdist rush attempt to stop such an assault with only 500 men to the mile? I have asked many experienced soldiers. The question, however, has never been answered in the affirmative. My figures, therefore, must be taken as the most favourable possible for the modern breech-loader.

Whatever the depth of the impenetrable zone the defender is able by his fire-power to draw across the front of his position, it is obvious that it must primarily depend on the maintenance of his fire-superiority over the assailant. If he can shoot down the latter quicker than the latter can shoot him down, well and good; he will be locally the victor now as formerly. Apart from all questions of turning flanks, surprise and Artillery preparation, the whole question narrows itself to this: is there any greater difficulty for the attack in attaining the first position whence this fire-superiority must be obtained nowadays than there used to be? Everything to my mind points to the reverse being the case.

We hear much of the impossibility of handling troops in close order within the zone of decision; but has it ever been otherwise? Does any one really suppose that, except against a rabble which could not shoot, and therefore could draw no zone of decision about itself, troops ever manœuvred in solid bodies within the limits the enemy's fire-power fixed for them? No; they behaved exactly as troops do now. They went forward under growing losses till their discipline failed, then they halted to fire, and either beat down their opponents' fire, when they went forward again, with or without fresh support, or they were beaten down themselves, when they either turned and ran, or took what cover they could get and waited for help. But in the latter case their position was desperate, for they could not load lying down, and hence had no fire-support to give to the advancing second line—a condition of things that cannot arise nowadays. That this is what happened is abundantly clear from the old diaries and letters of the period, but besides the rudimentary condition of the Press in those days, there are other reasons why we heard less about these matters then than we do nowadays.

It was not the "custom of war" at that time for generals to take

their regimental officers and men into their confidence. Every one knew that the bullet did the work and not the bayonet, but it had been found by experience that, if troops had been taught to halt and open fire at a given distance from the enemy in the attack, they were apt to judge this distance exceedingly liberally when the bullets were flying. Frederic the Great complains of battalions which had been taught not to open fire until within 200 paces halting and firing at 500 and 600, and once halted they were very difficult to set in motion again. So all mention of firing in the advance was interdicted, and troops were taught that "those battalions will recommend themselves most to the King which advance upon the enemy with the bayonet without firing a shot."*

It was perfectly well understood that the men would halt and open fire, but it was not considered the correct thing to do, and hence was not enlarged upon by regimental officers when it happened. Moreover, the great works on War which have become our authorities were written by veterans for veterans, and these did not need to be told what the details of an attack were generally like—all the matter for which nowadays the public are so greedy, was taken as read, and the mere fact of success or repulse alone noted.

Actually the strain was far more severe while it lasted, for, as I have shown above, there were the same number of bullets, which nowadays go whirring over the plain up to 3000 yards all to be encountered within 600, the men fell much more rapidly, as the casualty lists, say of Prague or Zorndorf, compared with those of the Modder River and Colenso, show, and if the second line did not reach the first in the nick of time—time measured by seconds—there was then no lying down and holding on to the ground won for hours by fire as now, until by successive reinforcements, which come easier to the attacker than the attacked, the needful superiority for a further advance can be acquired.

I am not one of those who believe that the small casualty returns in the recent war show any real diminution in our national spirit. On the contrary, I think that our Army, as a whole, adapted itself very practically to an exceedingly difficult task. There was no use in dashing ourselves against entrenchments from which the Boers could bolt whenever they desired, so we promptly dropped the practice ; but had the Boers been compelled to fight us on even

* See Frederic the Great's 'Instructions for the Infantry,' about 1749. I regret I have not the book at hand to give the exact page and wording. It is also worth pointing out that it was distinctly ordered that the Infantry should clear their front of runaways, by fire when necessary, and that the supernumerary rank were to run any man through the body who attempted to skulk.

terms, *i.e.* unable to escape the critical moment, I fancy that the fighting would have been just about as dangerous and deadly as that between the North and South in America. It is the racial quality of the combatants and the stake they are fighting for that makes war bloody; the weapons, if firearms, signify relatively little.

In my last chapter I dealt at length with the enormous gain accruing to the attack from the greater area of ground, and consequently greater opportunities for concealment which the increased range of modern firearms confers. The power of surprise is also enormously facilitated, for the obvious reason that it is easier to get within 5000 yards of a position unperceived than within 500.

Hence, while the ultimate struggle to obtain fire-superiority is not, and cannot be, either greater or less than it was, since with equal weapons it depends solely on the relative quality of the opposing forces, every step which leads up to the attainment of the decisive fire-position is very materially easier than it formerly was, and the assistance which other troops at a distance can also lend to the actual attacking line is also much greater in proportion to the increased range of the weapons employed. But all turns on "mobility," using the term in its widest sense to embrace not only the actual pace of manoeuvre, but the readiness to move first.

The one side being "ready" first, the other must necessarily be less "ready," and, under modern conditions, this unreadiness must take the form more or less of want of concentration. Columns are moving up by road or rail to their appointed places, and gaps in their line of resistance must exist which will be felt out by the advancing reconnoitring screen. Collision must then occur between the main bodies somewhat in the manner shown in the diagrams, Fig. 1 and Fig. 2.

In the former, the line is already pierced and the advantage gained of turning two flanks; in the latter, a continuation of the forward movement must lead eventually to another Paardeberg, and in both the assailant fights with the full advantage of the initiative. He knows where he is going, and the spirit of his orders fulfils itself automatically. The defender has to change his plan at the very moment when such change is most difficult and detrimental to his design, and this is the whole secret of the advantage derived from attacking a column in flank; it is moral, not material. Actually all the column commander has to do is to say "halt," "right (or left) turn," and a formidable front of fire is immediately evolved; yet experience shows that this expedient rarely succeeds, so overpoweringly great is the influence of "moral effect."

Still the "unreadiness" may take the form of a general state of unpreparedness in rear of a line of defence into which the fighting troops have already moved. Then the disadvantage to the defender increases with the length of line he is compelled or tempted to hold. His line must be strong enough everywhere. The attack

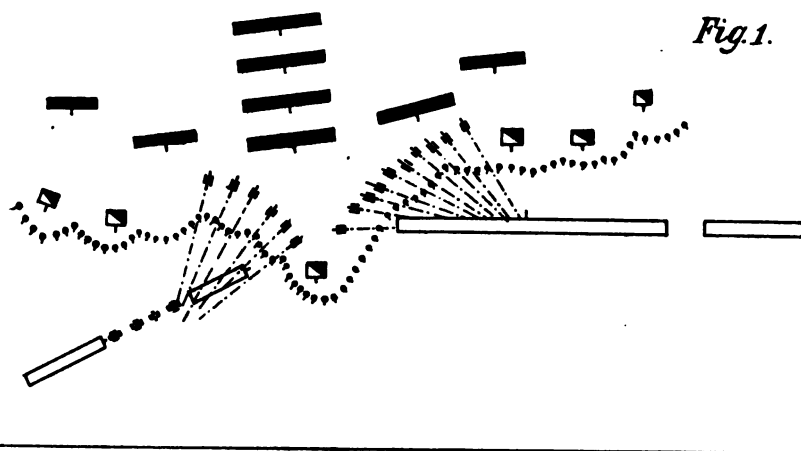


Fig. 1.

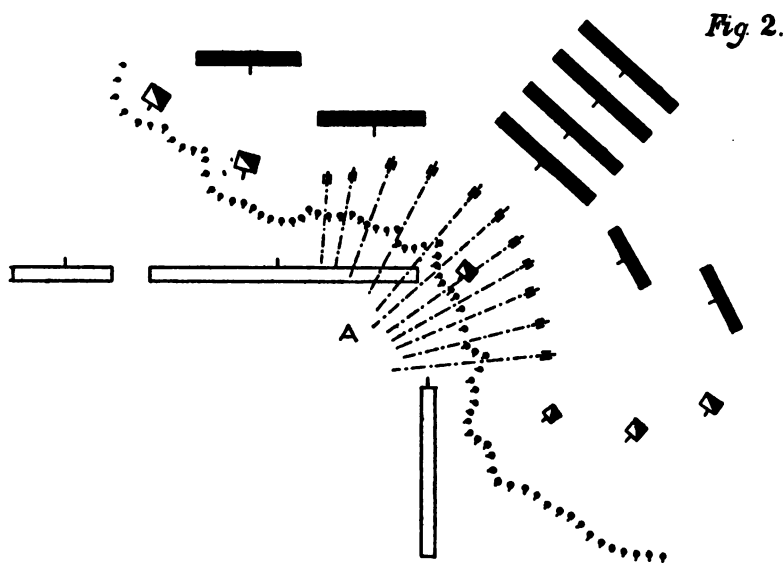


Fig 2.

requires strength only at one point, and that of its own choosing, and the time requisite to make that strength felt becomes less in proportion as the range of weapons increases. Five hundred guns will cut through an obstacle, whether physical or material or partly both, in less time than fifty, and reinforcements take longer to

arrive from a flank fifty miles away than from one only five, so that it is quite conceivable that a striking force, *i.e.* Infantry and Field Artillery, can again defeat a defending force numerically greatly superior, a result which has not been attained as between equal European Armies since the days of Roszbach; the essential condition being that it knows how to attack in the most rapid possible manner, which for the Artillery requires great endurance in the horses and precision in manœuvre, for the Infantry the highest standard of battle discipline and the knowledge how best to employ its fighting-power.

It will be evident that this "best" depends mainly on the topographical circumstances of the ground. The best form of attack for broken ground will not necessarily be the best across the open, and the defender will generally have chosen the open for his assailant to cross.

In broken ground only as many men as can find effective bullet-stopping cover can be usefully employed. Cover from sight against the storm of lead 5000 men to the mile can pour out is useless. In the open the ground gives no cover, rapidity of advance and one's own fire when halted are the only expedients, and when the conditions are closely analysed, it will be seen that the old two-deep line fulfils these requirements best.

No one in his senses can suppose that across a perfect glacis, the fire of 100 rifles to the mile can beat down the reply of 5000. Each little dot as it appeared in the open would become the target for fifty rifles, and fifty rifles will make more hits on a single target than on fifty, which means that the impression of imminent personal danger, the real thing that checks the advance, will be fifty times greater than it would be if each of the defenders' rifles had a target of its own to fire at. There would be more hits, perhaps, on all the fifty targets, but no one target would show as many perforations as the single one; hence the inducement to the men in the line to stop and lie down would be very much less than for the skirmishers, and, as a consequence, they would get in much closer to the enemy before halting and opening fire, and when they did open, the storm of bullets would have a very different effect in disturbing the enemy's aim than the occasional "wheep" "wheep" of the few surviving skirmishers' bullets.

To build up a fire-superiority from the present skirmisher basis would take hours, and men would be falling all the time, whilst reinforcements would be arriving on the other side. But the line carries its own reinforcements with it, and does its work in minutes instead of hours; the reinforcements on the other side arrive too late.

Von Scherff, in one of his recent studies ('Unsere heutige Infanterie Taktik'), says that if an Army was really handled in strict conformity with the new Prussian regulations, it could never hope to win a battle at all, unless the other side's regulations were worse; and he makes the remark *à propos* of the fatal attraction cover in the shape of copses, hollows, etc., exercises on attacking troops, illustrating the question with a detailed study of the operations at St. Privat and Gravelotte respectively, in which he shows that though the total losses on the two halves of the field were practically equal, the Guards and Saxons had something to show for their work in the possession of the conquered village, whilst the Southern Corps never really got within the effect range of their own needle-guns. He expressly rules out the tactical or other qualifications of the superior commanders. Under similar circumstances he thinks all would have acted the same, and attributes the result entirely to the disintegrating effect the presence of cover and the views in regard to its use exercised upon the forward impetus of the whole. Working the matter out, and particularly with reference to the points as to the diminution in direct fire-power as the range increases, it follows that with equal modern armaments, the open glaxis-like slope, not steep enough to interpose a physical obstacle, but broad enough to afford room for the deployment of some 10,000 men, offers the best prospect of winning a decisive victory at least cost to the general who has nerve enough to launch his men to the assault (of course, after suitable preparation). Anything—hedgerow, quarry, or copse—that offers cover is an impediment to the execution of the whole design, and it is on unity that success depends.

This is the essential feature of the French manœuvres which our ignorant correspondents are so fond of declaiming against; but in so doing they disclose only their own incapacity, for the system has been thought out by exceedingly competent men, to whom the dreadful "battles" and awful "disasters" of South Africa, in comparison with their own experiences, appear as the most trivial skirmishes, and I am convinced that if this system ever has a fair trial against that in use in the German Armies, the latter will undergo a very painful awakening indeed. "By "fair" trial I mean that the execution by the men and regimental officers shall come up to the excellence of the design, a point which one may venture to express a doubt about; but the idea is right, and if the men will "go on" with the same reckless gallantry their fathers again and again displayed in 1870, the system must succeed.

I am aware that many find it difficult to follow the line of reasoning I have adopted. This is almost entirely due to a want of

THE EVOLUTION OF INFANTRY TACTICS.

mathematical training of their faculties, which prevents their analysing the problem in all its aspects and keeping its many influencing factors clearly before the mind. But the thing can be worked out experimentally, and without the expense and trouble of a campaign in South Africa. Get a few paper soldiers, a shot-gun and a level surface, and the exact truth of all my propositions can be very easily worked out.

THE END.

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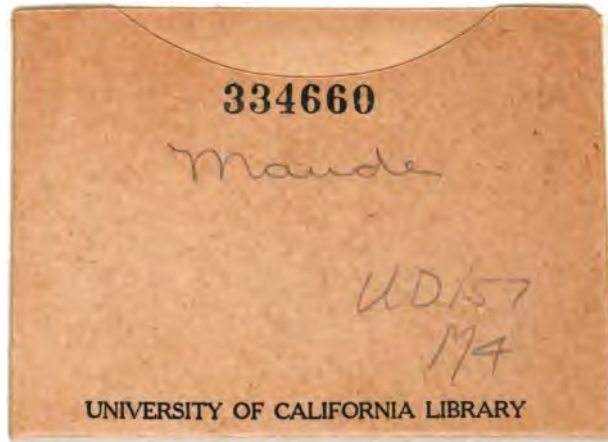
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